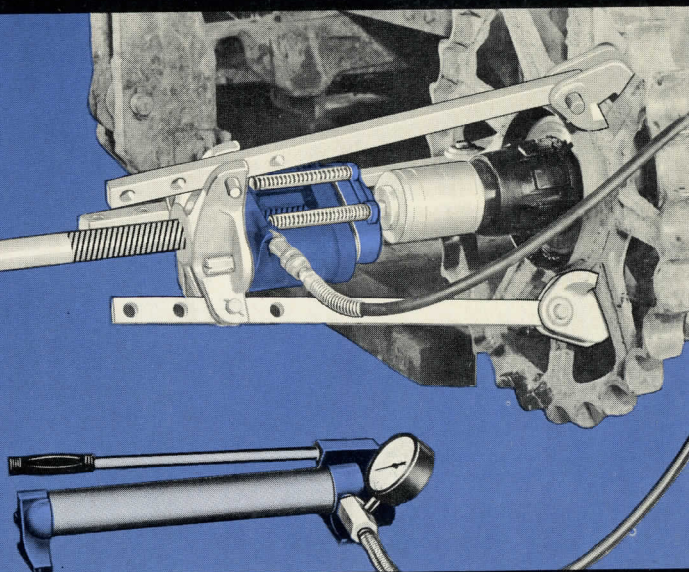


**SPECIAL TOOLS AND HYDRAULIC  
MAINTENANCE EQUIPMENT - FOR**

# **CARS • TRUCKS • TRACTORS**



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**OWATONNA TOOL COMPANY**

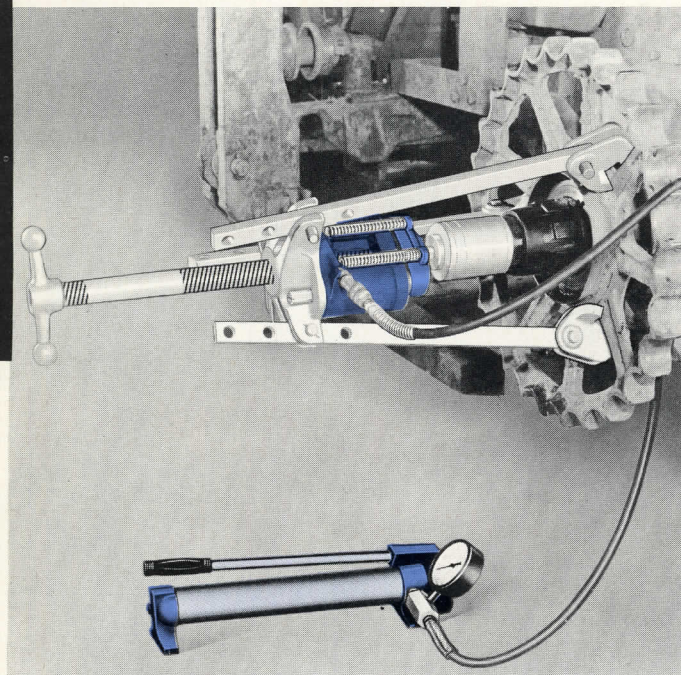
**OWATONNA, MINNESOTA, U. S. A.**





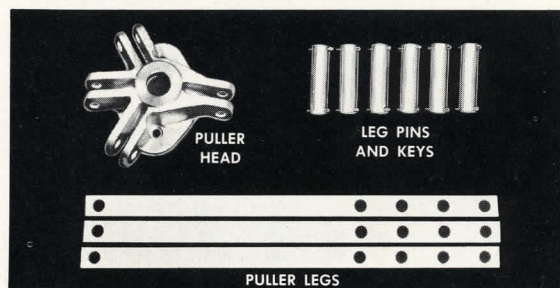
# REMOVE AND INSTALL SPROCKETS QUICKLY AND EASILY WITH OTC 50 OR 100-TON PULLING-INSTALLING SETS

INDUSTRIAL SECTION



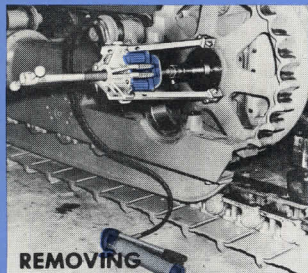
- Safe, smooth hydraulic power eliminates sledge-hammer, back-breaking methods
- Universal sets and special sets for specific makes of tractors

Save time and money and cut unnecessary downtime costs with efficient, easy-to-use OTC sprocket pullers. Although a specific pump is included in each hydraulic set (see chart, page 3), other pumps are available: manually-operated, electric-motor or gasoline-engine-driven. Basic components, included in every set, are illustrated below.



These are the components common to every sprocket pulling set.

## ALLIS-CHALMERS



REMOVING

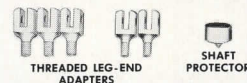


INSTALLING

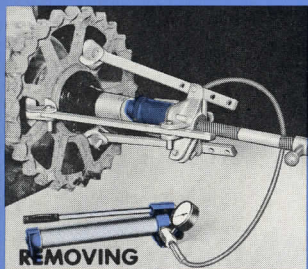
(Special OTC sprocket nut wrenches are used for installing. See p. 9.)

## SEE CHART NEXT PAGE

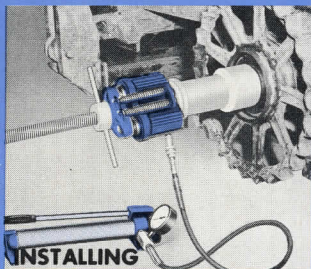
Two  $\frac{3}{4}$ " threaded adapters for HD-5, HD-6, and three  $\frac{3}{4}$ " threaded adapters for all other AC tractors (for connecting the puller to the sprocket) plus a shaft protector adapter (for the puller screw to bear against) are needed in addition to the basic components shown above. Special AC sprocket nut wrenches, not included in the AC sets, can be used for installing the sprocket; see p. 9. Illustration (left) shows 50-ton unit removing an HD-21 sprocket.



## CATERPILLAR

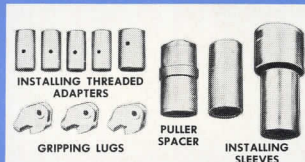


REMOVING

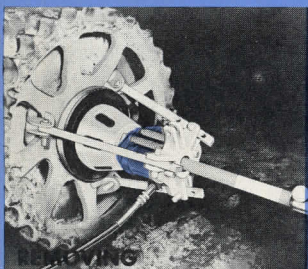


INSTALLING

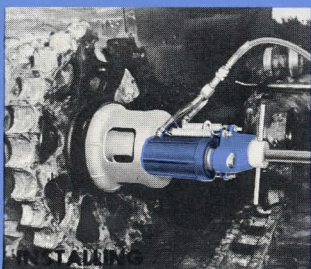
A puller spacer (against which the ram screw bears during the removing operation), three gripping lugs (attached to the ends of the puller legs to grip the sprocket), an installing sleeve for D-2's, plus an installing sleeve for D-4, D-6, D-7 and D-8 tractors are included in addition to the basic components. Exclusive, non-slip gripping lugs provide extra safety.



## INTERNATIONAL HARVESTER

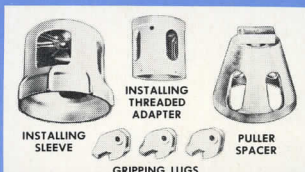


REMOVING

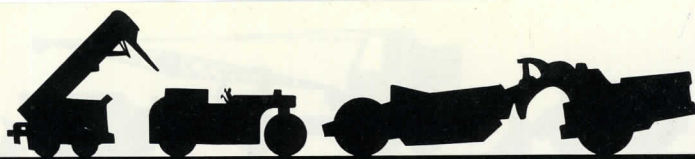


INSTALLING

A puller spacer (against which the ram screw bears during the removing operation), two TD-24 installing adapters, and three gripping lugs (attached to the ends of the puller legs to grip the sprocket) are used in addition to the basic components. The gripping lugs provide extra safety; the harder the pull, the tighter they grip. Applications (left) are demonstrated on a TD-24 tractor.



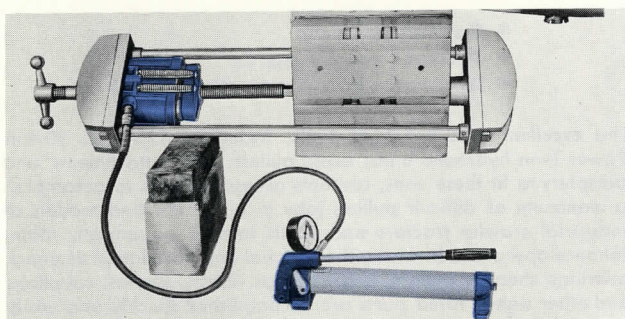




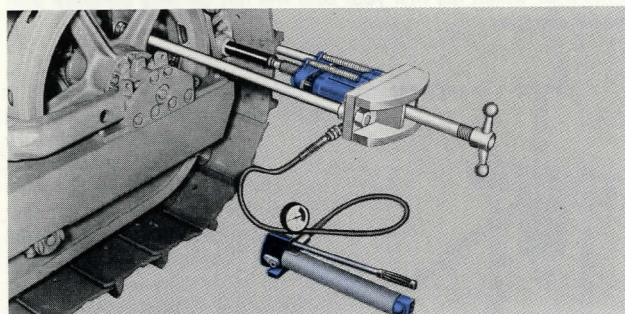
INDUSTRIAL SECTION

## master pin pullers

### REMOVE AND INSTALL TRACK MASTER-PINS WITH TIME- SAVING 50-TON HYDRAULIC PULLING-INSTALLING SET



Master pin being removed on an Allis-Chalmers HD-9 tractor.



Master pin being installed on an Allis-Chalmers HD-9 tractor.

- Eliminates unsafe sledgehammer, back-breaking methods
- Smooth, dependable hydraulic power does the job quickly and easily; saves 'down-time' costs

Minimize costly downtime with the OTC portable Master-Pin puller-installer. Pins can be removed and installed quickly and safely with substantial savings in time and labor, when it becomes necessary to split the track to perform some other maintenance operation on the tractor. Set adapters handle all makes and models of tractors. Customers already having an OTC 50-ton hydraulic unit need order only master pin group No. Y-650. The complete set, No. Y650-A, includes versatile hydraulic ram and pump which can be used to power other OTC pullers plus OTC shop presses, or used as an independent power source.

#### CONTENTS OF Y650-A SET

Part No.	Description	Part No.	Description
Y650-1	Puller Head	Y650-11	1 25/32" Bushing
Y650-2	Puller Legs (2 req'd.)	Y650-12	1 25/32" Bushing
Y650-3	Puller Base	Y650-2C	1 1/4" SAE Reg. Nut (4 req'd.)
Y650-4	1" Dia. Pin	Y650-13	Hex Head Cap Screws (2 req'd.)
Y650-5	1 3/8" Dia. Pin	Y650-16	Ram Screw Guide Bar (yoke)
Y650-6	Screw Adapter	Y-53	50-Ton Power-Twin hydraulic pump, gauge and tee.
Y650-7	1 1/2" Bushing		Ram with Y21-A Hand-operated
Y650-8	1 1/2" Bushing		Y21-A Hand-operated
Y650-9	1 1/2" Bushing	Y50-12	Ram Forcing Screw
Y650-10	1 1/2" Bushing	Y50-13	Ram Adjusting Crank

### SPROCKET PULLING-INSTALLING SETS . . . (CONTINUED)

OTC Power-Twin hydraulic ram and pump, in addition to their use with the sprocket pulling-installing attachments, are versatile, time-saving units in other maintenance operations: use with other OTC pullers plus OTC shop presses, use as a jack or as an

independent power source for some other application. Customers already having OTC 50 or 100-ton Power-Twin hydraulic unit need order only the sprocket puller group "without hydraulics." Pumps supplied with the complete hydraulic sets are manually operated; electric-motor-driven pumps are available at extra cost.

SETS		UNIVERSAL SET		ALLIS-CHALMERS		CATERPILLAR		INTERNATIONAL	
		50-TON	100-TON	50-TON	100-TON	50-TON	100-TON	50-TON	100-TON
WITH HYDRAULICS* . . . . . SET NO.		Y505-A	Y1105-A	Y502-A	Y1103-A	Y500-A	Y1101-A	Y501-A	Y1102-A
WITHOUT HYDRAULICS . . . . . SET NO.		Y-505	Y-1105	Y-502	Y-1103	Y-500	Y-1101	Y-501	Y-1102
	CONTENTS	TOOL NO.							
		50-TON	100-TON						
* {	"Power-Twin" Hydraulic Unit	Y-53	Y1003-A	x	x	x	x	x	x
	Adjusting Screw	Y50-12	†Y1000-12	x	xx	x	xx	x	xx
	Adjusting Crank	Y50-13	Y1000-13	x	x	x	x	x	x
	Speed Nut	Y50-15	Y3100-6	x	x	—	x	x	x
	Ram Head Plain Insert	Y50-2D	Y1000-2D	x	—	—	x	x	—
	Puller Head	Y500-1	Y1100-1	x	x	x	x	x	x
	Puller Legs (3 req'd.)	Y500-2	Y1100-2	x	x	x	x	x	x
	Leg Pins (6 req'd.)	Y500-6	Y1100-4	x	x	x	x	x	x
	Leg Keys (12 req'd.)	Y500-7	Y1100-5	x	x	x	x	x	x
	Puller Lugs (3 req'd.)	Y500-3	Y1100-3	x	x	—	x	x	x
	Shaft Protector	625-1	625-1	x	x	—	—	—	—
	Adapter, 3/4" (2 req'd.)	Y500-4	Y1100-8	x	x	x	—	—	—
	Adapter, 3/4" (3 req'd.)	Y500-5	Y1100-9	x	x	x	—	—	—
	Spacer	Y510	—	x	x	x	x	—	—
	D-2 Installing Sleeve	Y511	—	x	x	x	x	—	—
	D-4, D-6, D-7, D-8 Inst. Slv.	Y512	SAME AS 50-TON	x	x	x	x	—	—
	D-2 Installing Adapter	Y513	—	x	x	x	x	—	—
	D-4 Installing Adapter	Y514	—	x	x	x	x	—	—
	D-6 Installing Adapter	Y515	—	x	x	x	x	—	—
	D-7 Installing Adapter	Y516	—	x	x	x	x	—	—
	D-8 Installing Adapter	Y517	—	x	x	x	x	—	—
	D-9 Pulling Adapters (3 req'd.)	—	Y1100-10	—	—	Not included in sets; must be ordered separately.		—	—
	D-9 Puller Spacer	—	Y1100-11	—	—			—	—
	D-9 Installing Sleeve	—	Y1100-12	—	—			—	—
	D-9 Installing Adapter	—	Y1100-13	—	—			—	—
	Cap Screws (2 req'd.)	—	Y1100-6	—	x	—	x	—	x
	Cap Screws (2 req'd.)	—	Y1100-7	—	x	—	x	—	x
	TD-24 Puller Spacer	Y518	SAME AS 50-TON	x	x	—	—	x	x
	TD-24 Installing Adapter	Y519	—	x	x	—	—	x	x
	TD-24 Installing Adapter	Y520	—	x	x	—	—	x	x

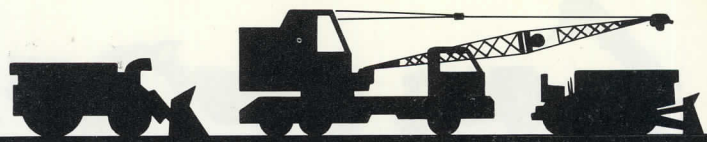
†(Both adjusting screws (Y50-12 and Y1000-12) are included where "xx" is shown.)





INDUSTRIAL SECTION

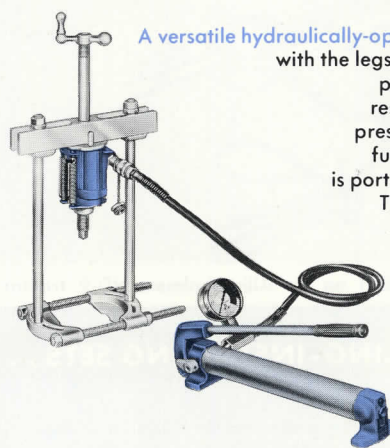
## puller sets



# SAVE DOWNTIME COSTS WITH SPECIAL OTC UNIVERSAL TRACTOR HYDRAULIC MAINTENANCE SET, NO. Y-1750

- Cut labor costs
- Protect costly parts
- Reduce equipment downtime

This excellent assortment of tools, including 17½ and 50-ton Power-Twin hydraulic units, basic pullers, and attachments and adapters to fit these units, contains necessary items to accomplish a maximum of difficult pulling jobs in all makes and models of industrial crawler tractors and earth moving equipment. Maintenance operations involving the removal and installation of gears, bearings, sheaves, pulleys, bearing cups, shafts, sleeves, couplings and other tightly fitted parts are accomplished quickly and easily and without damage to costly parts. Set will pay for itself many times over within the first year and will not become obsolete with model changes.



A versatile hydraulically-operated, 2-leg Push-Puller with the legs threaded into a bearing pulling attachment closely resembles a hydraulic shop press and performs the same function . . . the Push-Puller is portable and easy to handle. The Push-Puller legs act as the upright of a shop press, and the pulling attachment acts as the press bed.

## CONTENTS OF SET, NO. Y-1750

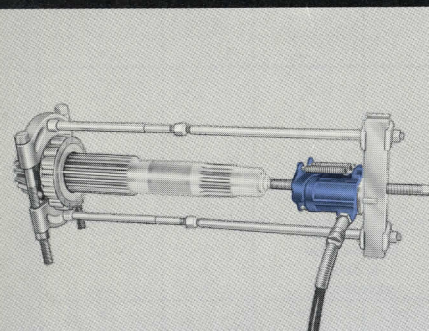
Description	Tool No.
17 ½-TON capacity hydraulic push-puller with 16 ½" legs . . . . .	938-HYD
Push-puller legs, 22 ½" (pr.) . . . . .	930-C
Push-puller legs, 9 ½" (pr.) . . . . .	930-D
Push-puller legs, 4 ½" (pr.) . . . . .	930-E
3-jaw Grip-o-matic puller assembly; use with 17 ½-ton ram . . . . .	1013 ½-LY
2-jaw Grip-o-matic puller head . . . . .	1003 ½-2H
Combination 2-way 3-way puller . . . . .	1011-A
Combination 2-way 3-way puller . . . . .	1012-A
Long jaws for 1012-A (3) . . . . .	1002L-1
Combination 2-way 3-way puller . . . . .	1013-A
Long jaws for 1013-A (3) . . . . .	1003L-1
Plain-hole ram head insert . . . . .	Y15-2D
Jack screw (for 17 ½-ton ram) . . . . .	Y15-14

Description	Tool No.
Pushing adapter, ½" shank . . . . .	938-14
Pushing adapter, ¾" shank . . . . .	938-15
Bearing cup pulling attachment . . . . .	943-E
Long jaws for 943-E (2) . . . . .	943-A1
Bearing cup pulling attachment . . . . .	947-E
Pulling attachment . . . . .	950
Pulling attachment . . . . .	951
Pulling attachment . . . . .	952-A
Pulling attachment . . . . .	952-D
Short bolts for 952-A (2) . . . . .	952-3
Pulling attachment . . . . .	953
Gear and pulley puller . . . . .	515
Short forcing screw for 515 . . . . .	515-T
Set: 6 female threaded adapters . . . . .	919
Female threaded adapter, ¾"-16 . . . . .	924

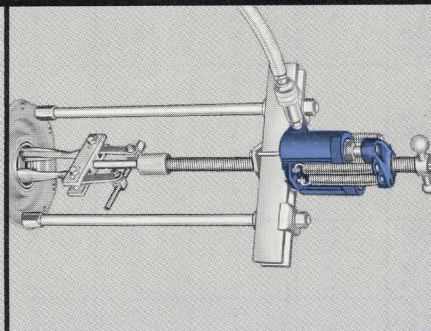
Description	Tool No.
Adapter F. ¾"-18 x M. ¾"-16 (2) . . . . .	15-M
Adapter F. ¾"-18 x M. ½"-20 (2) . . . . .	16-M
Adapter F. ¾"-18 x M. ½"-13 (2) . . . . .	17-M
Adapter F. ¾"-18 x M. ¾"-11 (2) . . . . .	20-M
Adapter F. ¾"-18 x M. ¾"-16 (2) . . . . .	24-M
Adapter F. ¾"-18 x M. ¾"-10 (2) . . . . .	25-M
Adapter F. ¾"-18 x M. 1"-14 (2) . . . . .	32-M
Adapter F. ¾"-18 x M. ¾"-16 (2) . . . . .	24-P
Adapter F. 1"-14 x M. ¾"-16 (2) . . . . .	32-R
Adapter F. 1"-8 x M. ¾"-18 . . . . .	32-S
Adapter F. 1"-8 x M. 1"-14 . . . . .	32-S
Set of 6 shaft protectors . . . . .	625-A
Set of 11 step plate adapters . . . . .	630-S
Set of 6 step plate adapters . . . . .	630-T
Manually-operated hydraulic pump with hose; half coupler; gauge; tee . . . . .	Y21-A

Description	Tool No.
50-TON capacity hydraulic push-puller with 18" legs . . . . .	939 ½-HYD
Push-puller legs, 34" (pr.) . . . . .	939 ½-B
3-jaw Grip-o-matic puller assembly; use with 50-ton ram . . . . .	1016-LY
2-jaw Grip-o-matic puller head . . . . .	1006-2H
Plain-hole ram head insert . . . . .	Y50-2D
Jack screw (for 50-ton ram) . . . . .	Y50-14
Pushing adapter, 1" shank . . . . .	939 ½-14
Pushing adapter, 1 ¼" shank . . . . .	939 ½-15
Adapter F. 1 ¼"-12 x M. 1"-14 (2) . . . . .	40-R
Adapter F. 1 ¼"-5 ½ x M. 1"-8 . . . . .	52-R
Adapter F. 1 ¼"-5 ½ x M. 1"-14 . . . . .	52-S

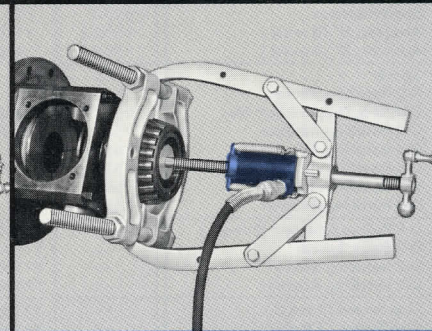
## TYPICAL MAINTENANCE JOBS FOR THE Y-1750 SET



Removing the rear bearing from the pinion shaft on Caterpillar tractor Models "D-7", "D-8" and "D-9".

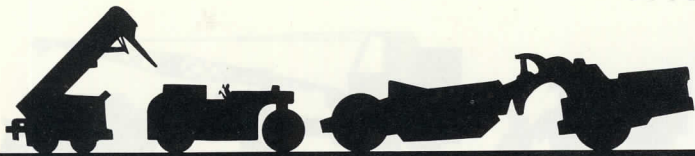


Removing the bull pinion shaft oil seal from an International tractor; model "TD-24".



Removing the differential carrier shaft bearing from a LeTourneau-Westinghouse "Tournapull"; model C.





INDUSTRIAL SECTION

**general tools**

INDUSTRIAL SECTION

## HEAVY DUTY ADJUSTABLE HOOK SPANNER WRENCHES

### ADJUSTABLE HOOK SPANNER, NO. CT-685

*Fed. Spec: GGG-W-665*

A versatile wrench, designed to replace many fixed-size spanner wrenches. This adjustable hook spanner wrench, as well as the heavy duty CT-686, covers the range of capacities needed to service industrial tractors and other equipment. Wrench comes with two interchangeable hook-jaws, one  $\frac{3}{8}$ " thick and the other  $\frac{1}{2}$ " thick, and each having eleven adjustments for a capacity from  $4\frac{3}{4}$ " to  $12\frac{3}{4}$ " outside diameter. Handle overall length is 24" and is 1" in diameter. Handle and jaws are drop forged from high alloy steel and fully heat-treated. Wt. 12 lbs.

### ADJUSTABLE HOOK SPANNER, NO. CT-686

*Fed. Spec: GGG-W-665*

Same basic style and rigid construction as CT-685, but comes with one  $\frac{3}{4}$ " thick, eleven-position hook-jaw for a capacity of  $4\frac{3}{4}$ " to  $12\frac{3}{4}$ " outside diameter. Handle overall length is  $25\frac{3}{4}$ " and is  $1\frac{1}{8}$ " in diameter. Wt. 14 lbs.

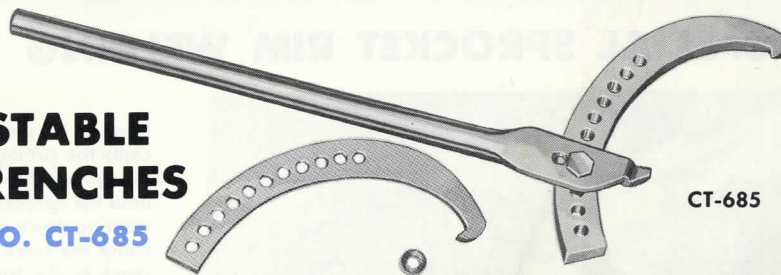
### ADJUSTABLE HOOK SPANNER, NO. 885

*Fed. Spec: GGG-W-665*

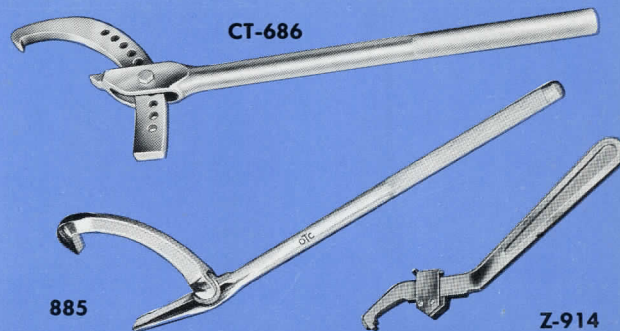
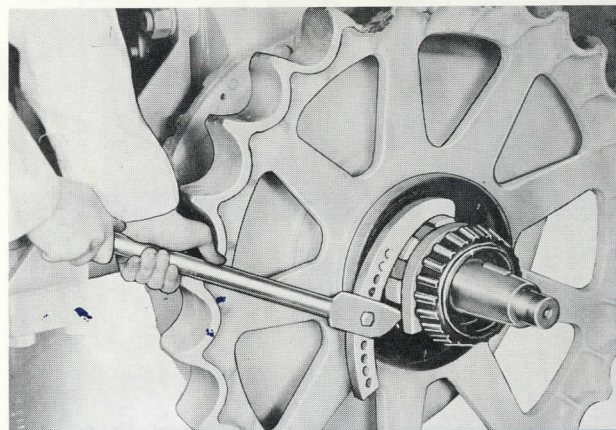
Practical for service on tractors, road machinery, power shovels and oil field equipment etc. This wrench will prove valuable wherever turret adjusting nuts or packing gland nuts are used. Handle overall length is 19"; capacity from  $1\frac{1}{2}$ " to 4"; wt. 3 lbs.

### SPECIAL ADJUSTABLE SPANNER, NO. Z-914

An extremely popular tool for adjusting pillow block bearings. Works well on International model "M" water pump or the power take-off on all IHC tractor models. Adjustable from  $\frac{1}{2}$ " to 2  $\frac{3}{4}$ "; wt.  $\frac{1}{2}$  lb.



CT-685



CT-686

885

Z-914

## SPECIAL TOOLS FOR CONSTRUCTION EQUIPMENT

### FAN BELT TENSION WRENCH, NO. A-12

Designed for quick and easy adjustment of the fan belt tension lock-nut on the high mount fan of Cummins diesel engines; models NH, NHS and NHRS, found on many makes of earth moving machinery and other equipment. Wrench has a 2" opening. Overall length 15 $\frac{1}{2}$ "; wt. 3  $\frac{1}{4}$  lbs.

### SPRAG ASSEMBLY SLEEVE, NO. A-11

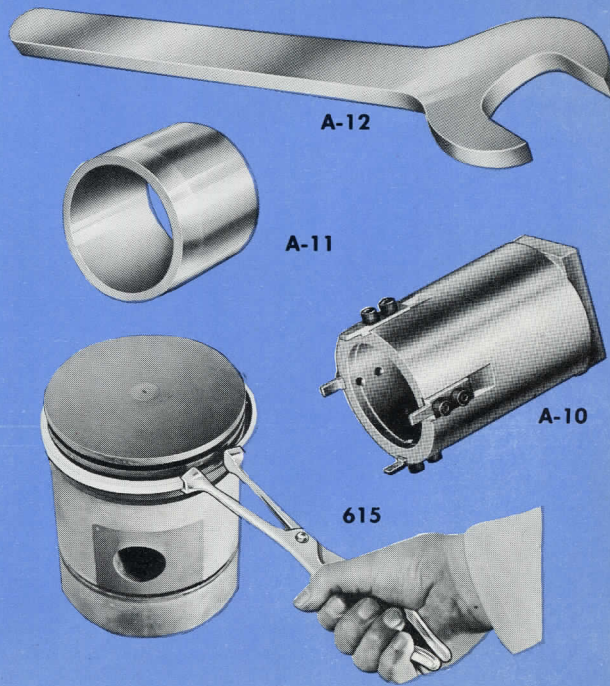
An essential tool for holding the stator freewheel rollers, springs and cups in place in the stators when installing the stators on the roller race in Allison CRT-5000 series transmissions and TC-500 series converters. Wt. 5  $\frac{3}{4}$  lbs.

### TORQUE CONVERTER TRANSMISSION RETAINING NUT WRENCH, NO. A-10

This spanner is required to loosen or tighten the difficult to service retaining nut in Allison CRT-5000 series transmissions and TC-500 series converters. Spanner can be used with any OTC  $\frac{3}{4}$ " square drive socket wrench. Wt. 5  $\frac{1}{4}$  lbs.

### PISTON RING PLIER, NO. 615

Designed to simplify removal and installation of rings on large diameter pistons without twisting or breaking. Provides adequate leverage to handle step, diagonal or straight cut rings without slipping. Wt.  $\frac{3}{4}$  lb.



A-12

A-11

A-10

615

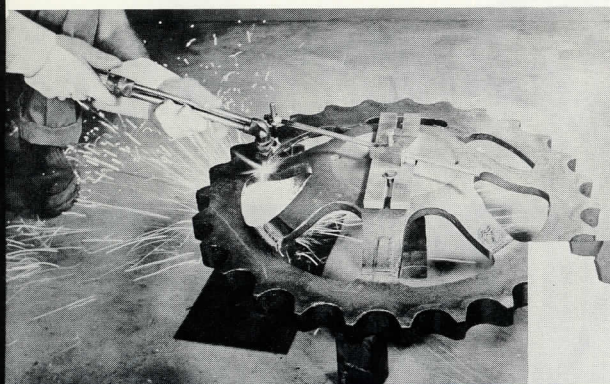




INDUSTRIAL SECTION

**Allis-Chalmers**

## SPECIAL SPROCKET RIM WELDING FIXTURE AND GAUGE



Here is a special OTC fixture—No. AC-970—designed especially for cutting the old sprocket rim from the hub, positioning and gauging the new rim and accurately rewelding the new rim onto the sprocket hub. This is an important operation, since the wearing down of the sprocket tooth surfaces can in severe cases cause the track sprocket to spin in the track, causing repeated shock to the tractor which can result in serious damage. Three jacking screws (shown, left) are included for leveling the rim.

Works on all Allis-Chalmers sprockets. Complete operating instructions are supplied with each set.

**No. AC-970**—Sprocket Rim Welding Fixture and Gauge Set

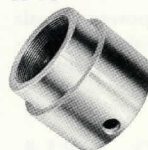
JACKING SCREW

## TORQUING FINAL DRIVE BEARINGS

Two special OTC torque wrench adapters are required to properly check the pre-load of the final drive outboard bearing and bearing cage assemblies—vital tools which assure satisfactory operation of the final drive. (The torque wrench and extension, OTC No. DR-100-I with  $\frac{3}{8}$ " drive, as shown in the illustration, is recommended but must be ordered separately.) Adapters are:

**No. AC-526**—For HD-6, HD-11. **No. AC-527**—For HD-16, HD-21.

## INSTALLING SPROCKET SHAFT BEARING



Here is a special tool for properly installing the final drive sprocket shaft outboard bearing.

**No. AC-971**—For HD-21

**No. AC-977**—For HD-16

## REMOVING BEARING RETAINING NUTS

This special OTC wrench—No. AC-969—is necessary for removing and installing the final drive sprocket shaft outboard bearing retaining nut on HD-21 tractors. See illustration.

## TORQUING SPROCKET SHAFT BEARINGS

Two special OTC torque wrench adapters are required to properly check the pre-load of final drive sprocket shaft bearings—torquing to factory specifications. (The torque wrench and extension, OTC No. DR-100-I with  $\frac{3}{8}$ " drive, shown in the illustration, is recommended but must be ordered separately.)

**No. AC-528** Adapter—For HD-5, HD-6, HD-9, HD-11, HD-15

**No. AC-529** Adapter—For HD-16 and HD-21

## REMOVING SUPPORT-ROLLER BEARINGS

A set of three special puller legs are required to remove the inner bearing retainer and seal guard from the track support roller on all AC crawler tractors. No. 970-A puller head, plus 17½-ton-capacity ram-pump unit complete the set-up.

**No. AC-530**—Special Puller Legs (only); Set of 3.

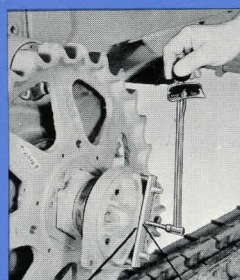
## REMOVING-INSTALLING HD-21 ROLLERS

Here is a safe and easy way to remove and install track rollers from and onto the HD-21 track roller assembly—using two special tools: a puller yoke and a step plate adapter . . . in addition to a standard OTC 50-ton Power-Twin hydraulic push-puller assembly: No. 939½-HYD, which includes ram, pump, hose, screw and crank. Two extra-length puller legs (No. 939½-B-1, each) should be ordered for use during installing. Standard legs are used for the removal operation.

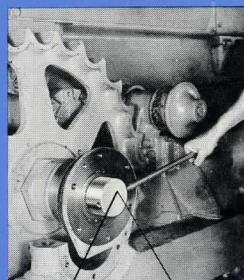
**No. AC-967**—Puller Yoke.

**No. AC-968**—Special Step Plate

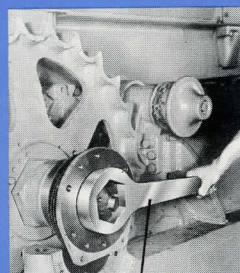
INDUSTRIAL SECTION



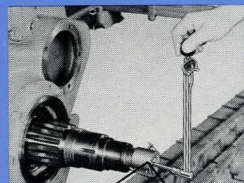
AC-526 AC-527



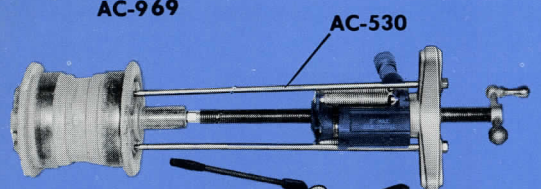
AC-971 AC-977



AC-969

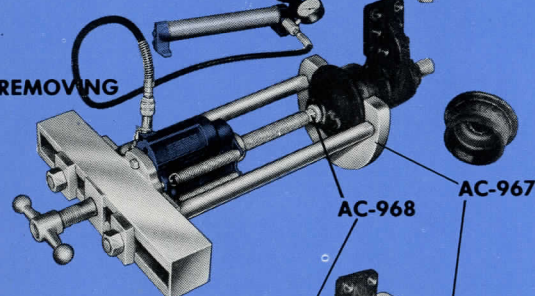


AC-528 AC-529



AC-530

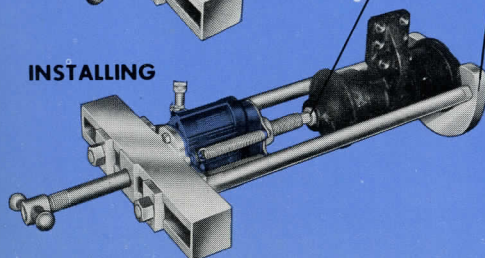
REMOVING



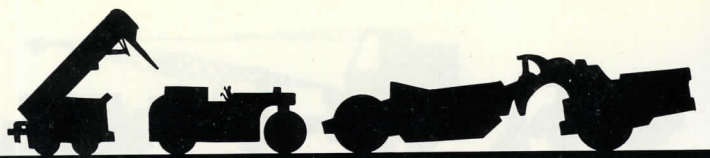
AC-968

AC-967

INSTALLING







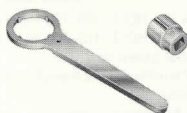
INDUSTRIAL SECTION

**Allis-Chalmers**

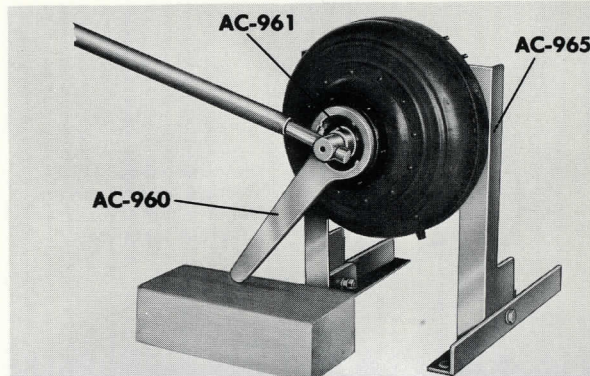


## AC TORQUE CONVERTER TURBINE SERVICE TOOL GROUP

Essential to successfully servicing the torque converter turbine is a new and special OTC tool group, consisting of a special spanner wrench and a turbine wheel-turning tool, shown (right) being used to tighten the turbine wheel bearing retaining nut. A special turbine housing stand is also needed to properly accomplish this service operation. To accurately torque the retaining nut, use OTC No. S-300 torque wrench with No. M-32-30 extension arm and No. MS-72-B10 1" square-drive male adapter (not illustrated, but described on P. 34).



**No. AC-960**—Turbine Spanner Wrench  
**No. AC-961**—Turbine Wheel Turning Tool  
**No. AC-965**—Turbine Housing Stand

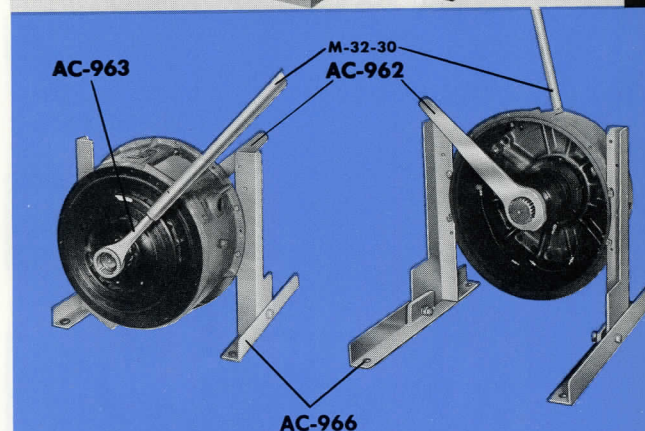


### SERVICING CONVERTER INPUT SHAFT

Two special spanner wrenches plus a specially designed housing holding-stand are needed for efficient service of this AC torque converter. The input shaft nut is removed and installed with wrench AC-963, while a holding spanner wrench AC-962 is used on the input shaft to keep it from turning. To properly torque this nut, use OTC torque wrench No. S-300 with No. M-32-30 extension arm into which the AC-963 will fit as a drive-end accessory to the torque wrench extension assembly.



**No. AC-963**—Input Shaft Nut Wrench  
**No. AC-962**—Input Shaft Holding Wrench  
**No. AC-966**—Clutch Housing Stand



### TURBINE HOUSING LIFTING BRACKET

A lifting bracket is necessary to conveniently handle the turbine housing. Illustration (right) shows the bracket in use as the turbine housing is being lowered onto the clutch housing. Note that the AC-966 stand is also being utilized.

**No. AC-964**—Turbine Housing Lifting Bracket

### AC TORQUE CONVERTER LIFTING EYE

This forged lifting eye threads into the torque converter and simplifies lifting the entire unit out of the tractor.

**No. AC-754**—Torque Converter Lifting Eye

### SPECIAL DIESEL ENGINE LIFTING SLING

This sturdy lifting sling has been designed to facilitate the handling of engines without danger. Holes are spaced properly to balance and handle all Allis-Chalmers engine models in conjunction with an overhead crane or other lifting device.

**No. AC-524**—Diesel Engine Lifting Sling

### CYLINDER HEAD, TRANSMISSION SLING

Here is a universal sling, designed especially for use on AC engines to lift and handle cylinder heads, transmissions and other assemblies of this nature. Gives safe, positive hold.

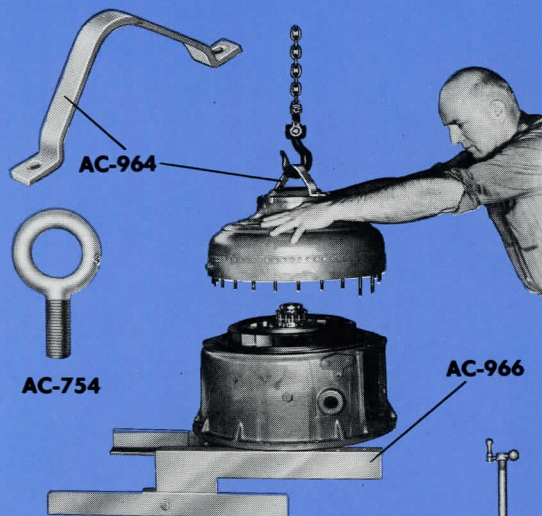
**No. AC-525**—Universal Cylinder Head, Transmission Sling

### INSTALL TRUCK WHEEL SEAL RETAINERS

A special tube for installing seal retainers on HD-11, HD-16 and HD-21 truck wheels and idlers. Seal retainers are pressed onto the shafts for a specified distance, measured from the end of the shaft; the slot in the tube enables the operator to measure this distance without removing the tube. Other tools needed are 970-A puller head, AC-530 puller legs and 17 1/2-ton ram, pump, screw and crank. See AC-530 description, page 6.



**No. AC-978**—Special Installing Tube



**AC-754**

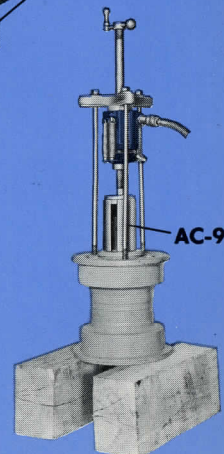
**AC-966**



**AC-524**



**AC-525**

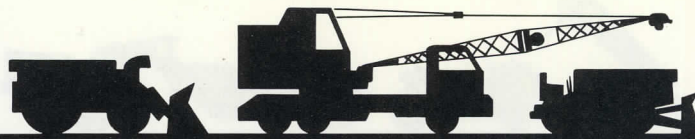


**AC-978**





INDUSTRIAL SECTION

**Allis-Chalmers**

INDUSTRIAL SECTION

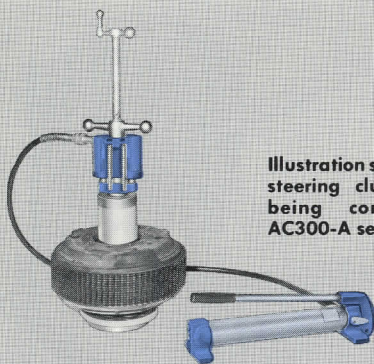
**SPECIAL STEERING CLUTCH COMPRESSION SET FOR AC**

Illustration shows HD-21 steering clutch springs being compressed — AC300-A set in use.

Set No. AC300-A is designed and built especially to compress and decompress steering clutch springs on all AC industrial tractors, and does this job faster, easier and safer than ever before. Customers who already have the OTC 17 ½-ton Power-Twin hydraulic ram and pump unit need only order Set No. AC-300, which does not contain hydraulics. Complete set-up and operating instructions are included with every set.

**CONTENTS OF AC300-A SET**

Part No.	Description	Part No.	Description
AC-301	Plate for AC-302 Tube	AC-307	Tube for HD-7, HD-10, HD-14
AC-302	Tube for all models	AC-308	Plate for HD-7, HD-10, HD-14
AC-303	Special plate	AC-309	Special Screw and Pin
AC-304	Plate for all late models	Y-18	Power-Twin Hydraulic Ram, Pump, Hose, Gauge
AC-305	Plate for HD-15, HD-16	Y15-13	Ram Adjusting Crank
AC-306	Plate for HD-7, HD-10, HD-14	973-8	Speed Nut

**INJECTION NOZZLE PULLER ADAPTER**

Necessary to remove the injection nozzle quickly and without damage, this special female adapter (threaded ¾"-18 and 22-1.5 metric) is used with OTC No. 943-S slide hammer puller (described on P. 32). Operation: Remove nozzle protector cap; thread adapter onto nozzle, then thread slide hammer shaft into adapter.

No. AC-522—Injection Nozzle Puller Adapter

**INJECTION NOZZLE WRENCH AND HOLDER**

Use on American-Bosch fuel injection nozzles, plus on farm and industrial diesel engines up to and including DA and DA-1290 models. Wrench "A" removes holder spring nut and tool "B" holds the nozzle in a vise without damage to the nozzle.

No. AC-520—Wrench ("A")

No. AC-521—Nozzle Holder ("B")

**MOTOR GRADER WHEEL PULLER ADAPTER**

Use two of these adapters with an AC 50-ton sprocket pulling set (described on P. 2) to pull wheels on AC motor graders,

No. Y500-8—Motor Grader Wheel Puller Adapter (2 req'd.)

**AC SUPERCHARGER SPANNER WRENCH**

This special wrench is designed for use with a ½"-drive torque wrench (OTC No. S-150, as illustrated) to loosen and tighten the supercharger driving pulley retaining nut.

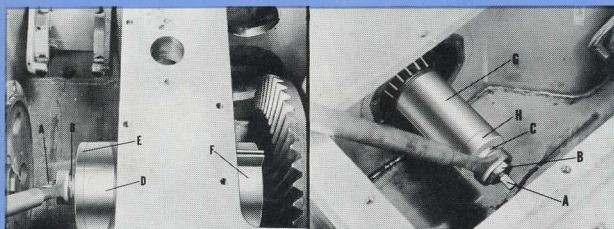
No. AC-523—Supercharger Spanner Wrench

**SERVICING THE HD-21 BEVEL GEAR SHAFT AND BEARING CONE ASSEMBLY**

Here are specially designed tools for removing the HD-21 tractor bevel gear shaft, and then installing the bearing cone assembly on the bevel gear shaft. Essential tools for proper servicing.

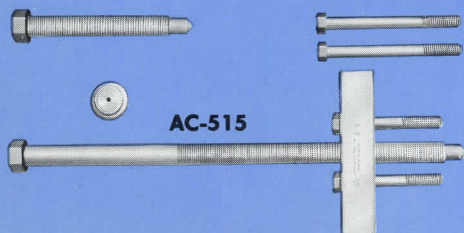
A. No. AC-972—Forcing Screw  
B. No. 938P-3—Hex Nut  
C. No. 938P-4—Thrust Washer (not visible in the "removing" illustration)  
D. No. AC-973—Pulling Tube

E. No. AC-974—Pulling Tube Cap  
F. No. AC-692—Split Sleeve  
G. No. AC-975—Pushing Tube  
H. No. AC-976—Pushing Tube Cap



REMOVING

INSTALLING



AC-515

**AC SUPERCHARGER DRIVE GEAR PULLER**

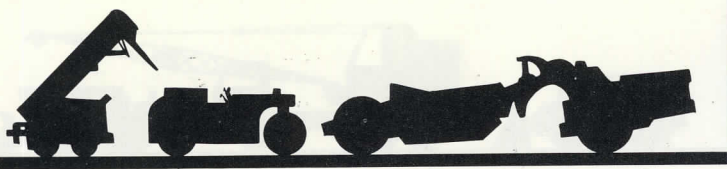
This set is essential for removing the Supercharger drive gear on Allis-Chalmers tractors. Set consists of No. 515 puller, No. 630-2 step plate adapter, plus a special short puller screw No. 515-T and two long special puller cap screws No. 515-HF.

No. AC-515—Supercharger Drive Gear Puller Set

**OWATONNA TOOL COMPANY**

OWATONNA, MINNESOTA, U.S.A.

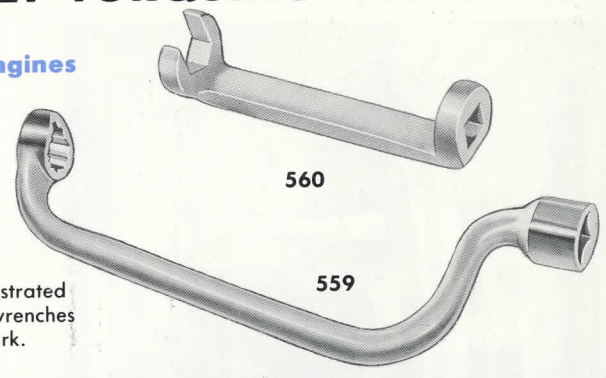




## AC DIESEL ENGINE HEAD BOLT TORQUING WRENCHES

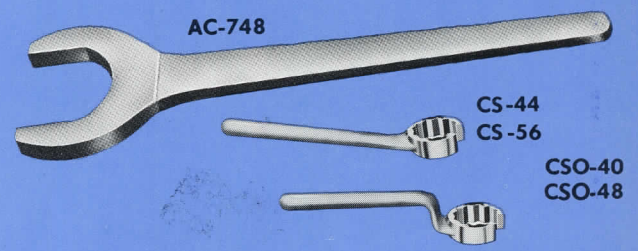
• For properly servicing AC 779 and 844 diesel engines

Two head bolt torquing wrenches are required for torquing the head bolts on Allis-Chalmers 779 and 844 diesel engines. Both wrenches have a  $\frac{1}{8}$ " opening—one being a box type wrench to clear the water manifold and the other being an open-end type wrench to fit the center studs. Wrenches are  $\frac{3}{4}$ " square drive. A complete variety of versatile OTC torque wrenches, torque wrench extensions and related drive-end accessories—giving OTC customers more torque wrench for their money—are described and illustrated on P. 34. Using accurate OTC torque wrenches plus proper head bolt wrenches and other accessories assure better, more long-lasting maintenance work.  
**No. 559**—Allis-Chalmers Head Bolt Box Wrench  
**No. 560**—Allis-Chalmers Head Bolt Open-End Wrench



## HEAVY DUTY SPROCKET NUT WRENCHES

To remove and install sprocket nuts on Allis-Chalmers tractors.  
**No. AC-748**— $6\frac{1}{2}$ " Wrench for HD-16; wt. 45 lbs.  
**No. AC-749**— $7\frac{1}{2}$ " Wrench for HD-21; wt. 50 lbs.  
**No. AC-750**— $6\frac{1}{2}$ " Wrench for HD-15, HD-19, HD-20; wt. 40 lbs.  
**No. AC-751**— $5\frac{1}{2}$ " Wrench for HD-9; wt. 27 lbs.  
**No. OA-36**—Adjustable Wrench for HD-5, HD-6; wt. 22 lbs.



## SPECIAL AC FLARE NUT WRENCHES

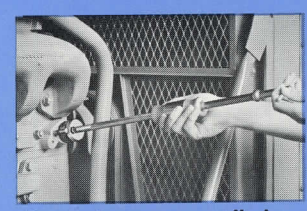
Four sizes fit the hydraulic lines on all AC industrial tractors.  
**No. CSO-40**—Double-offset Flare Nut Wr.,  $1\frac{1}{2}$ " opening.  
**No. CS -44**— $15^\circ$ -offset Flare Nut Wr.,  $1\frac{1}{2}$ " opening.  
**No. CSO-48**—Double-offset Flare Nut Wr.,  $1\frac{1}{2}$ " opening.  
**No. CS -56**— $15^\circ$ -offset Flare Nut Wr.,  $1\frac{1}{2}$ " opening.

## ENERGY CELL AND CELL PLUG PULLER SET

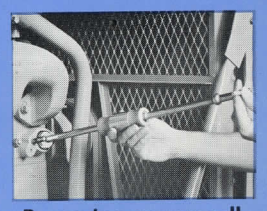
This puller set with adapters is built specially for removing the energy cell and energy cell plug on AC diesel engines.  
**No. AC44-A**—Energy Cell and Cell Plug Removing Set

### CONTENTS OF AC44-A

- No. 943-S**—Slide Hammer Puller
- No. AC-43**—Energy Cell Plug Removing Adapter for all AC diesel engines
- No. AC-42**—Energy Cell Removing Adapter for 779 and 844 engines
- No. AC42-A**—Energy Cell Removing Adapter for 516, 516S and 344 engines
- No. AC43-A**—Energy Cell Removing Adapter for 153 and 230 engines



Removing energy cell plug



Removing energy cell

## AC DIESEL ENGINE TIMING GAUGES

Accurate flexible shaft gauges built especially for AC engines.

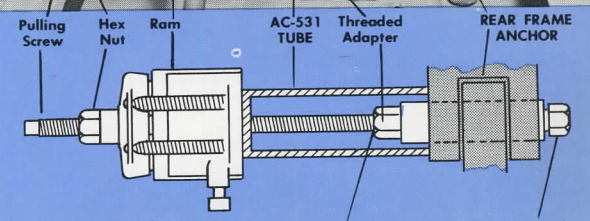
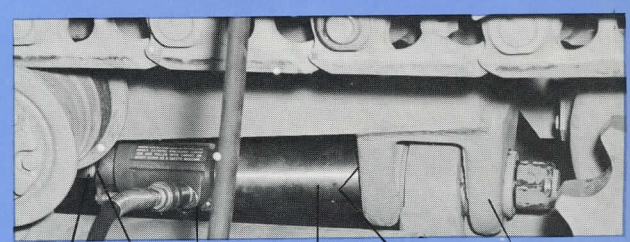
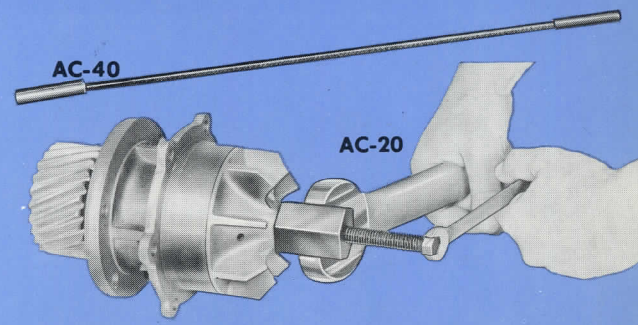
No.	Size	For Engine No.	For Tractor or Equipment No.
AC-39	.512 & .567	344; HD-516G	HD-6; HD-11G
AC-40	.215 & .160	D-779; D-844; DS-844; HD-844	PU; HD-16 & 16AC
AC-45	.200 & .215	DA-779; DAS-779; TDA-844	TS-200; TS-300; TS-360
AC-46	.275 & .215	HDS-844; HD-844	HD-21; HD-16
AC-47	.450 & .567	HD-516; HD-516G; 516S	HD-11B; HD-11G; 45 Motor Grader

## SPECIAL WATER PUMP IMPELLER PULLER

For removing water pump impeller from shaft on engines HD-844, HD-844C, HDS-844, TD-844 and TDS-844. Puller consists of two parts: OTC 515-T screw and 936-B threaded adapter.  
**No. AC-20**—AC Water Pump Impeller Puller

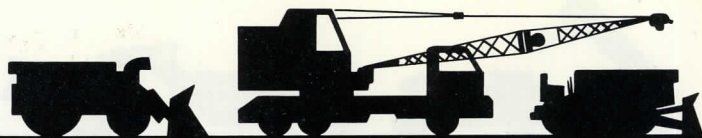
## PULLING ANCHOR PIN ON TS-6 SHOVEL

For Tractomotive serial nos. 3995 and up, plus those prior machines with new style pin which has a drilled and tapped  $1\frac{1}{2}$ " hole. For 17  $\frac{1}{2}$ -ton set-up, use: Y-18 ram-pump, Y15-2D plain insert, Y15-12 pulling screw, 32N adapter and AC-531 pulling tube. For 30-ton set-up, use: Y-33, Y30-2D, Y30-12, 41H and AC-531, resp.  
**No. AC-531**—TS-6 Rear Frame Anchor Pin Pulling Tube

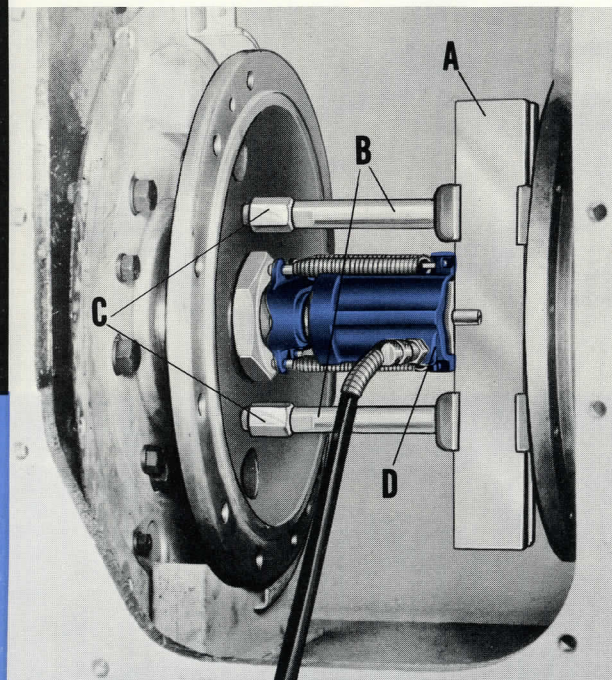


Pulling screw threaded into adapter  
NOTE: Lock nut should be backed off two turns.





## TOOLS FOR PULLING D-9 FINAL DRIVE PINION FLANGE



### • Designed to make a tough job easy

Through the use of hydraulic power this otherwise difficult, time-consuming job becomes one that is little more difficult than removing a nut from a bolt.

#### OTC TOOLS NECESSARY TO GET THE JOB DONE

(photo left)

A. 938-HY—Push-puller

B. 930-E—Push-puller legs, 4 1/2" long

C. 25-M—Male-female adapters; F. 3/8"-18 x M. 3/4"-10

D. Y-18—17 1/2-ton Power-Twin ram and hydraulic pump assembly  
NOTE: Do not remove retaining nut. Loosen it and back off several turns. Head of ram to bear against shaft.

For helpful information on other Caterpillar pulling jobs write to the Owatonna Tool Company; Owatonna, Minnesota and ask for bulletin No. CT-58.

### VALVE SPRING COMPRESSOR, NO. CT-683

Designed for use on all current and non-current Caterpillar diesel engines. Compressor cannot slip . . . adapter is threaded onto stud to hold it in place (photo left) and ample leverage is provided to easily compress the valve spring. Drop forged from high alloy steel and fully heat-treated. Wt. 6 lbs.

### MODEL "12" MOTOR GRADER DRIVE SPROCKET ADAPTER, NO. Y-525

This adapter makes tandem drive sprocket replacement a simple job. Use with various other OTC tools as listed: Y50-12 adjusting screw, No. 512 pushing tube, Y50-15 speed nut and an OTC 50-ton Power-twin, center-hole ram. Wt. 6 lbs. (See page 2)

### MODEL "12" MOTOR GRADER WHEEL INSTALLING ADAPTER, NO. 32-T

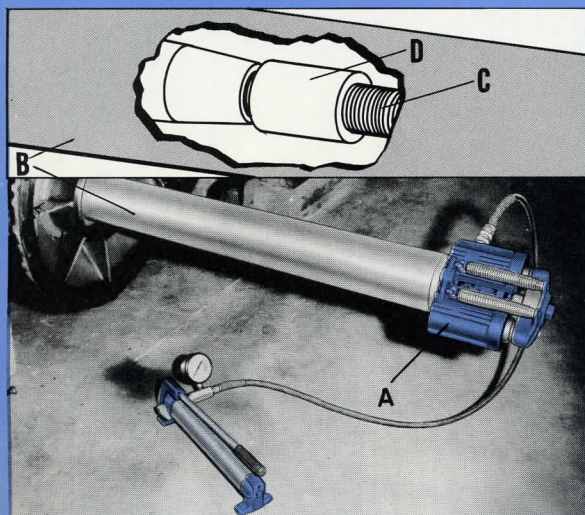
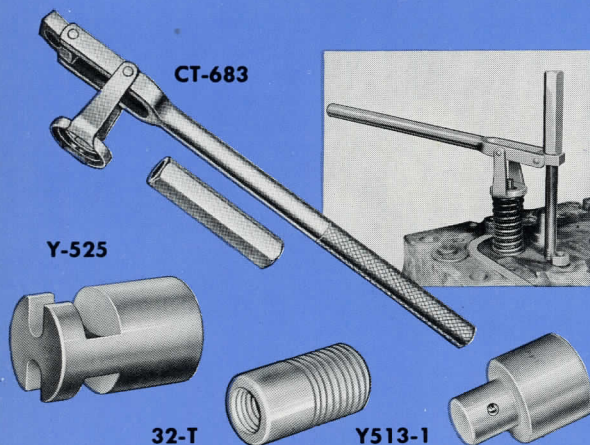
This adapter, M. 1 1/8"-5 1/2 x F. 1"-8, permits the use of an OTC 17 1/2-ton Power-Twin, center-hole ram while installing Caterpillar model "12" motor grader wheels. Use adapter with the following OTC tools: Y-513 adapter, Y15-2 forcing screw, Y-511 pushing tube and the OTC 17 1/2-ton Power-Twin ram. (See page 2)

### DEAD AXLE INSTALLING PLUG, NO. Y513-1

Designed for installing Caterpillar crawler tractor dead axles. Use the following OTC threaded adapters with the Y513-1 adapter for various Caterpillar models: Y-513 for "D-2", Y-514 for "D-4", Y-515 for "D-6", Y-516 for "D-7" and Y-517 for "D-8". Use the Y513-1 dead axle installing plug as follows: The proper size threaded adapter (indicated above) is threaded onto the dead axle shaft and the Y513-1 plug is then inserted into the thread-adapter. Use a sledge hammer against the driving plug to drive the dead axle into place. Weight of plug, 3 1/2 lbs.

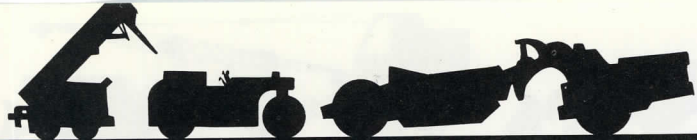
### DEAD AXLE PULLING TUBE, NO. Y-526

This tool permits fast and easy removal of the dead axle shafts from all Caterpillar tractors, "D-2" thru "D-8". The job is made easy primarily because of the OTC 50-ton Power-Twin "center-hole" ram. In addition to the ram, the job requires the use of a Y50-12 screw and the following OTC threaded adapters for various Caterpillar models: Y-513 for "D-2", Y-514 for "D-4", Y-515 for "D-6", Y-516 for "D-7" and Y-517 for "D-8". Accomplish the pulling job (photo left) in the following manner: Thread the proper size threaded adapter (indicated above) onto the dead axle shaft, thread the Y50-12 screw into the adapter, slip the pulling tube over the screw so that it butts up against the main frame case of the tractor, place the ram over the screw and apply pressure, removing the dead axle shaft with ease. Tube is 43" long x 5" ID; wt. 60 lbs.



Removing the dead axle shaft from a Caterpillar crawler tractor with the A. OTC 50-ton Power-Twin, "center-hole" ram, B. Y-526 pulling tube, C. Y50-12 screw and D. threaded adapter.





INDUSTRIAL SECTION

International



## SPECIAL IHC DIESEL PRE-COMBUSTION CUP PULLER

### • Remove cups quickly, safely and easily

Here is an indispensable tool for pulling pre-combustion cups on all International diesel engines. Specially designed, expandable adapters assure a positive grip inside the pre-cup and will not slip regardless of the condition of the cup. This tool can be powered either manually or with the popular OTC 17 1/2-ton Power-Twin "center hole" hydraulic ram. Ram can also be used to power other OTC hydraulic pullers and hydraulic shop presses. **No. Y-697**—Manually-operated Pre-Cup Puller Set (Wrench, illustrated in action photo, not included in Y-697 set.)

**No. Y697-A**—Pre-Cup Puller Set with hydraulic units\*

#### CONTENTS OF Y697-A SET

- \* { Y-18-17 1/2-ton Power-Twin hydraulic ram, pump, hose, gauge
- Y15-2D—Plain hole ram insert
- Y695-1—Pulling tube
- Y695-2—Puller screw
- Y695-3—Forcing nut
- Y695-4—Expanding screw
- Y695-5—Expanding adapter for 24 series
- Y695-6—Expanding adapter for 14, 14A, 18, 18A series and D-525
- Y695-7—Expanding adapter for 6, 9, 16 series and D-264
- Y695-8—Expanding adapter for D-236 and D-282

### INJECTION NOZZLE PULLER, NO. HC-689

This specially designed puller set removes the diesel fuel injection nozzles from the cylinder heads on all IHC diesel engines, including models D-236 and D-282. An efficient tool approved and recommended by IHC service engineers.

### DIESEL RING COMPRESSOR, NO. HC-686

Designed especially for use on IHC diesel engines; operates on the 14, 14A, 18 and 18A. Operation: place connecting rod with piston in a vise with brass jaws to avoid damage to the rod; assemble the ring compressor over the rings and press the two halves of the tool together until the clips snap in place.

### IMPULSE COUPLING PULLER, NO. MT-50

Here is an inexpensive, time-saving tool for pulling the impulse coupling on IHC magnetos H-1, H-4, F-4 and F-6.

### TD-24 SPROCKET DRIVE WRENCH, NO. Y-521

This specially designed heavy duty wrench is used to remove and install the sprocket drive retainer nut on the TD-24 tractor. An essential wrench—does this tough job safely and easily.

### GEAR CARRIER THREAD CHASER, NO. Y-523

Restores damaged threads on the TD-24 sprocket drive gear carrier. Operation: apply tool on good threads, tighten the tool turnbuckle and back off; take as many cuts as needed.

### PIVOT SHAFT THREAD CHASER, NO. Y-524

Restores damaged threads on the TD-24 pivot shaft quill. Operation: apply tool on good threads, tighten and back off. More than one pass might be required to fully restore threads.

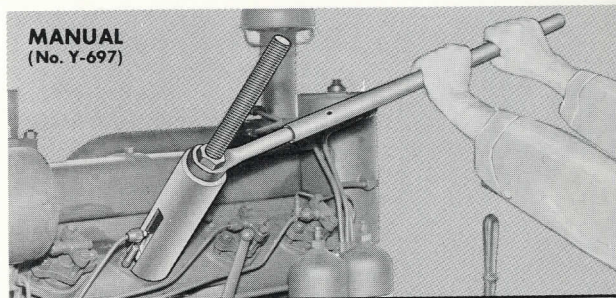
### PIVOT SHAFT PULLING-INSTALLING SET

This powerful, 100-ton capacity hydraulic unit is specifically designed to smoothly and easily remove and install the pivot shaft on IHC tractors T-6, TD-6, T-9, TD-9, T-14, TD-14 and TD-18. Simple adapters are easy to handle. Use "Power-Twin" hydraulic ram and pump also to power OTC sprocket puller-installer, other OTC pullers and hydraulic shop presses. Standard unit is supplied with manually-operated two-speed pump; other pumps—electric or gasoline—are available at additional cost.

**No. Y3100**—Pivot Shaft Puller-Installer, less hydraulics

**No. Y3100-A**—Pivot Shaft Puller-Installer with hydraulics

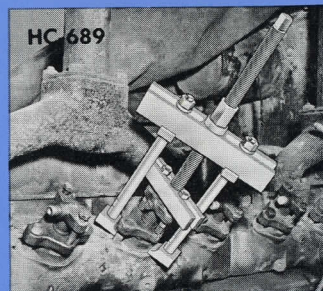
MANUAL  
(No. Y-697)



HYDRAULIC  
(No. Y697-A)



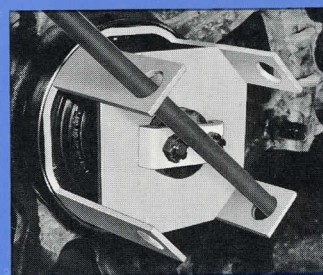
HC 689



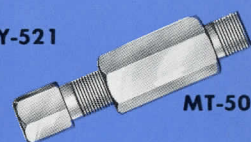
HC-686



Y-521



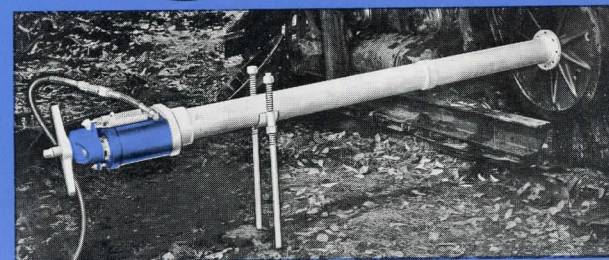
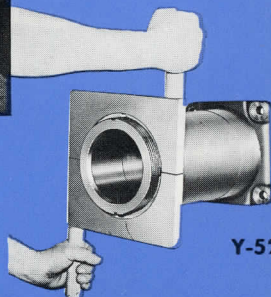
MT-50



Y-523



Y-524

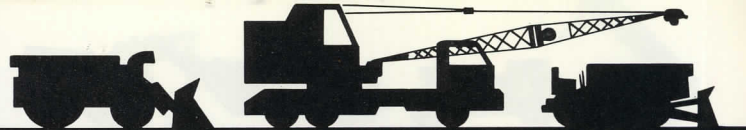


No. Y3100-A removing a pivot shaft from a TD-18 tractor.

**OWATONNA TOOL COMPANY**  
OWATONNA, MINNESOTA, U.S.A.

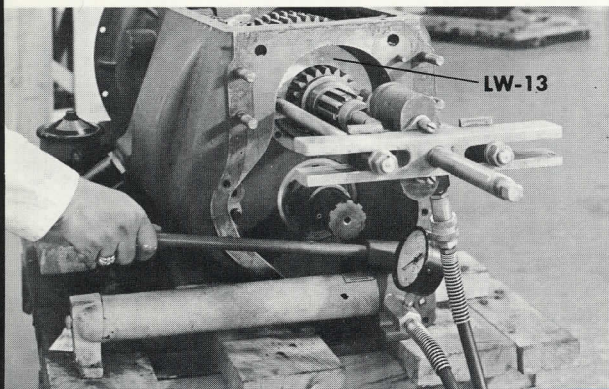
INDUSTRIAL SECTION





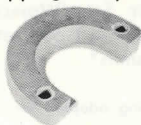
# **TOOLS FOR LETOURNEAU-WESTINGHOUSE TOURNAPULLS**

INDUSTRIAL SECTION

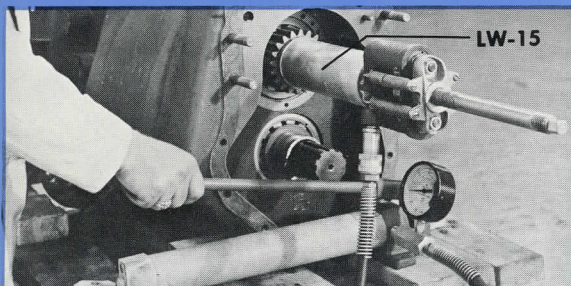


## **REMOVING MAINSHAFT OVERDRIVE GEAR IN FULLER TRANSMISSIONS**

A special OTC yoke, No. LW-13, is used with an OTC hydraulic push-puller (No. 938-HYD) to remove the Model B Tournapulls mainshaft overdrive gear in Fuller model L-1520 transmissions. The threaded leg-ends of the push-puller are threaded into the two holes in the yoke which has a stepped inner edge for properly gripping and pulling the gear without damage to the gear, the shaft or other parts. The smooth hydraulic power of the OTC 17 1/2-ton capacity Power-Twin "center-hole" ram and pump accomplishes the job quickly and easily. This OTC hydraulic unit is also used for many other maintenance operations as shown below.

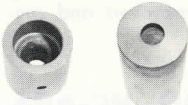


LW-13



## **INSTALLING MAINSHAFT OVERDRIVE GEAR IN FULLER TRANSMISSIONS**

In addition to the OTC hydraulic ram and pump described above, two special tools are needed to properly and easily install the mainshaft overdrive gear: a threaded adapter, No. LW-14, which threads into the shaft and onto the puller screw; and, a pushing tube, No. LW-15, which fits around the puller screw and against which the ram bears to push the gear on.

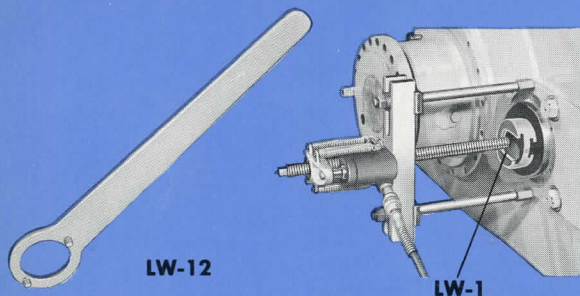


LW-14

LW-15

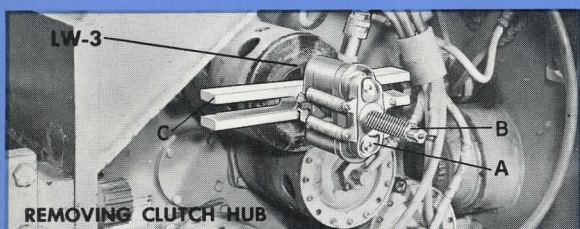
## **REMOVING AND INSTALLING LOCK NUT IN FULLER L-1520 TRANSMISSIONS**

Here is a specifically-designed spanner wrench, No. LW-12, for removing and installing the lock nut in Fuller L-1520 transmissions, used in LeTourneau-Westinghouse Model B Tournapulls.



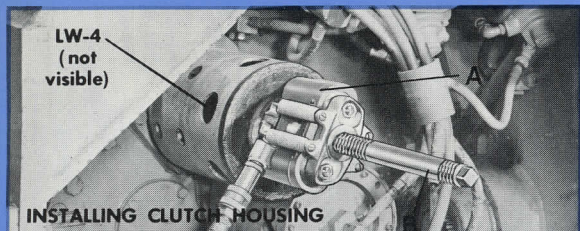
LW-12

LW-1

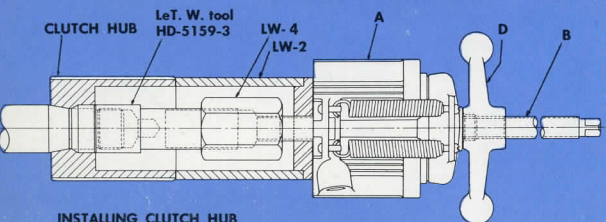


LW-3

REMOVING CLUTCH HUB


LW-4  
(not visible)

INSTALLING CLUTCH HOUSING



INSTALLING CLUTCH HUB

## **REMOVING FINAL DRIVE PINION ON MODEL C AND MODEL D TOURNAPULLS**

Action picture (left) shows final drive pinion being removed on a model C Tournapull with the use of OTC 17 1/2-ton push-puller and special adapter, No. LW-1. To accomplish the operation on the model D, the opposite side of adapter LW-1 is used. This operation is not necessary on the model B Tournapulls. The specially-designed LW-1 adapter is an essential tool for easier maintenance.



LW-1

## **SERVICING MODEL 7C CLUTCH**

Illustrations (left) show how three special OTC adapters, Nos. LW-2, 3 and 4, are used with OTC hydraulics on model 7C Tournamatic transmissions. To remove clutch hub, the LW-3 is threaded into the clutch hub and a threaded metal ring from the LeTourneau tool set is used against the clutch housing. To install the clutch housing, the LW-4 adapter (not visible in picture) threads into the clutch hub drive shaft and the adjusting screw threads into the LW-4. To install the clutch hub, the LW-4 connects the shaft and the adjusting screw; the LW-2 pushing tube transmits the rams force to the clutch hub.



LW-2

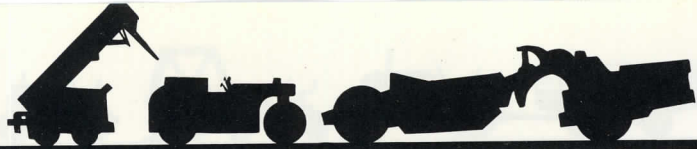
LW-3

LW-4

### **OTHER OTC TOOLS SHOWN:**

- A**—No. Y15-A 17 1/2-ton hydraulic ram
- No. Y21-A** Manually-operated pump (not shown)
- B**—No. Y15-12 Ram adjusting screw
- C**—No. 938-1 Puller Cross block
- D**—No. 973-8 Speed Nut





INDUSTRIAL SECTION

LeTourneau

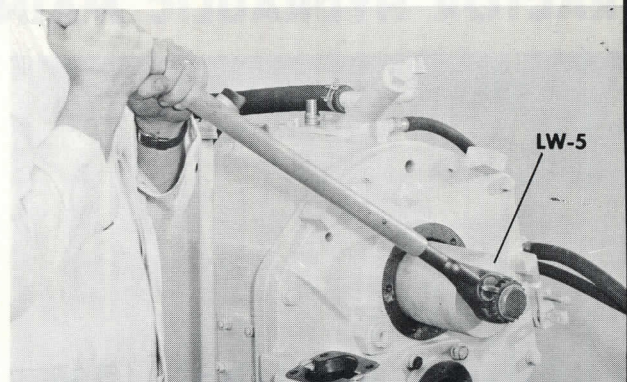
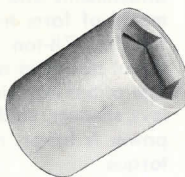


## TOOLS FOR SERVICING "L-W" ADAMS MOTOR GRADERS

### REMOVING-INSTALLING HEX NUT ON POWER SHIFT CLUTCH FRONT END

A specially-designed 2 3/4" hex-opening socket wrench—OTC No. LW-5—is used to remove and install the hex nut on the front end of the Adams motor grader power shift clutch shaft. This nut requires 650 ft./lbs. of torque. LW-5 socket takes 3/4" square drive; recommend using OTC No. P-61 heavy duty reversible ratchet with P61-6 3/4" drive adapter and No. M-28 tubular extension handle. Another special LeTourneau-Westinghouse tool, OTC No. LW-6, (described below) is used to hold the shaft while the hex nut is being turned.

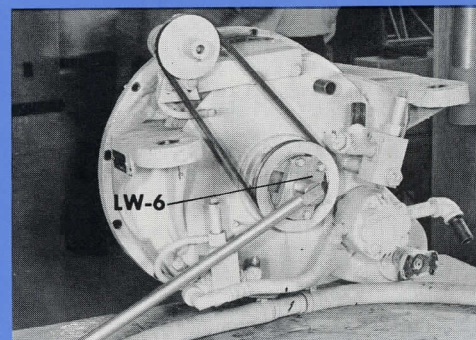
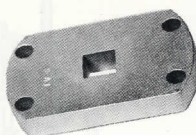
LW-5



### LOCKING UPPER SHAFT IN POWER FLOW TRANSMISSION WHEN REMOVING NUTS

As a part of the hex-nut removing operation described above, a special 3/4" drive holding plate—OTC No. LW-6— bolts to the universal joint mounting holes to lock the upper shaft in Adams motor grader Power Flow transmission when removing the hex nuts from the front end of the power shift clutch shaft. The LW-6 holding plate is an essential tool for this service operation; makes the job go quicker and easier. A needed tool for a modern, up-to-date service shop.

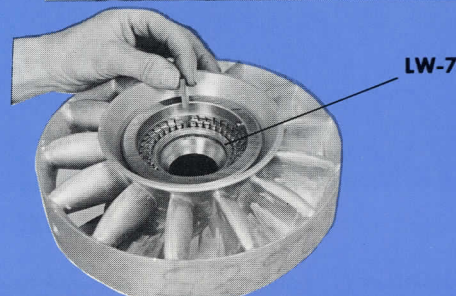
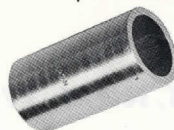
LW-6



### ASSEMBLING SPRAGS IN NO. 660-T TORQUE CONVERTER REACTOR HUB

Here is a specially-designed sprag clutch assembly sleeve—OTC No. LW-7—which acts as a guide so that sprags can be positioned one at a time between the sleeve and the reactor hub. Illustration (right) shows sleeve tool LW-7 in position while a sprag is being inserted.

LW-7

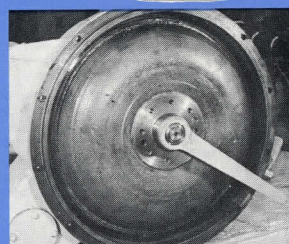


### SERVICING N-06, N-09 BEARING LOCK NUTS ON CONVERTER TURBINE SHAFT

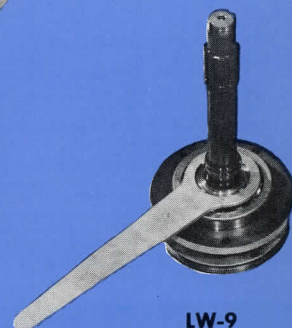
No. LW-8 spanner wrench is specifically designed for removing and installing N-06 bearing lock nut on Adams motor grader transmission torque converter turbine shaft.

No. LW-9 spanner wrench is another special spanner, used to service the N-09 rear bearing on torque converter turbine shaft. Use vise to hold shaft. See illustrations.

LW-8



LW-9



### REMOVING-INSTALLING NUT WHICH HOLDS SLEEVE IN TORQUE CONVERTER HOUSING

A new OTC plate-type spanner wrench—No. LW-10—services the nut which holds the sleeve in the torque converter housing in Adams motor graders. Handles the nut safely and easily, without damage. Wrench takes 3/4" drive square. Nut requires 250-300 ft./lbs. of torque.

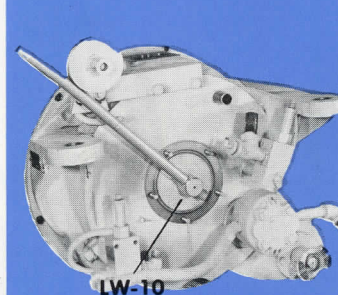
LW-10



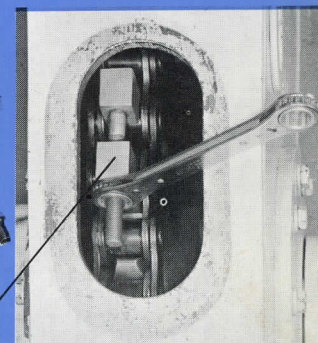
### INSTALLING MASTER LINK IN TANDEM DRIVE CHAIN IN ADAMS MOTOR GRADERS

This specially designed chain connecting tool—OTC No. LW-11—is used to install the master link in the tandem drive chain. Tool jaws grip the chain, and as 3/4" nut is turned down, the jaws squeeze the links into position. Used with OTC No. RB-2428 (3/4" and 1/2") ratchet box wrench.

LW-11



LW-11





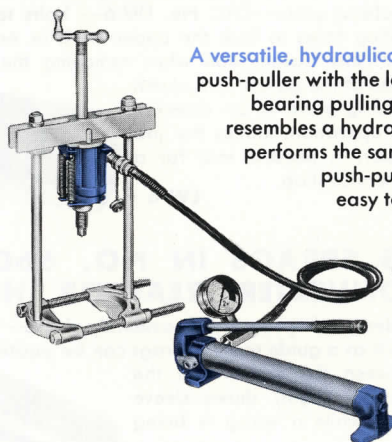


# SAVE DOWNTIME COSTS WITH SPECIAL UNIVERSAL FARM TRACTOR HYDRAULIC MAINTENANCE SET, NO. Y-1701

- Reduce equipment downtime
- Reduce labor costs
- Reduce unnecessary replacement of parts

A versatile set of tools that includes all of the basic pullers, attachments and adapters necessary to service every make and model of farm tractor on the market today. This set also contains a 17½-ton Power-Twin hydraulic unit which supplies sufficient power to accomplish 98% of the removing and installing operations involving gears, bearings, bearing cups, sleeves, pulleys, sheaves, shafts etc., without damaging the parts. Hydraulic power is faster, requires less labor and in addition, eliminates torque.

These tools will not become obsolete and will be as useful in the years to come as they are now. By low cost addition of specific items, your tool investment can be kept to a minimum with this versatile OTC farm tractor hydraulic maintenance set, useful also, on many other types of equipment.



A versatile, hydraulically-operated, 2-leg push-puller with the legs threaded into a bearing pulling attachment closely resembles a hydraulic shop press and performs the same functions . . . the push-puller is portable and easy to handle. The push-puller legs act as the uprights of a shop press, and the pulling attachment acts as the press bed.

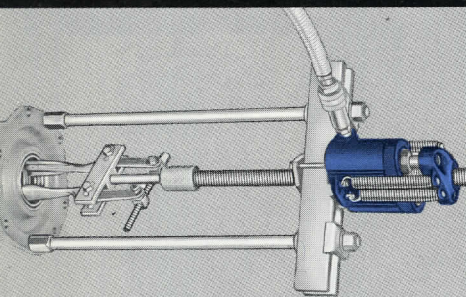
## CONTENTS OF SET, NO. Y-1701

Description	Tool No.
17 ½-TON capacity hydraulic push-puller with 16 ½" legs	938-HYD
Push-puller legs, 22 ½" (pr.)	930-C
Push-puller legs, 9 ½" (pr.)	930-D
Push-puller legs, 4 ½" (pr.)	930-E
Manually-operated hydraulic pump with hose; half coupler; gauge and tee	Y21-A
3-jaw Grip-o-matic puller assembly for use with 17 ½-ton ram	1013 ½-LY
2-jaw Grip-o-matic puller head	1003 ½-2H
2-jaw Grip-o-matic puller	1001
2-jaw Grip-o-matic puller	1002
2-jaw Grip-o-matic puller	1003
Plain-hole 17 ½-ton ram head insert	Y15-2D

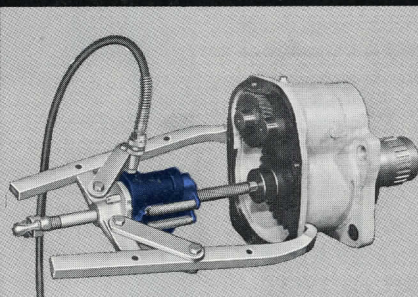
Description	Tool No.
Jack screw (for 17 ½-ton ram)	Y15-14
Pushing adapter, ½" shank	938-14
Pushing adapter, ¾" shank	938-15
Pulling attachment	950
Pulling attachment	951
Pulling attachment	952-A
Bearing cup pulling attachment	943-E
Long jaws for 943-E (2)	943-A1
Pilot bearing puller	954
Long jaws for 954 (2)	955-14
Slide hammer puller	960
Gear and pulley puller	515
Short forcing screw for 515	515-T

Description	Tool No.
Set of 6 female threaded adapters	919
Female threaded adapter; ¼"-16	924
Adapters; F. ¾"-18 x M. ¾"-16 (2)	15-M
Adapters; F. ¾"-18 x M. ½"-20 (2)	16-M
Adapters; F. ¾"-18 x M. ½"-13 (2)	17-M
Adapters; F. ¾"-18 x M. ¾"-11 (2)	20-M
Adapters; F. ¾"-18 x M. ¾"-16 (2)	24-M
Adapters; F. ¾"-18 x M. ¾"-10 (2)	25-M
Adapters; F. ¾"-18 x M. 1"-14 (2)	32-M
Adapter; F. 1"-8 x M. ¾"-18	32-R
Adapter; F. 1"-8 x M. 1"-14	32-S
Set of 6 shaft protectors	625-A
Set of 11 step plate adapters	630-S
Set of 6 step plate adapters	630-T

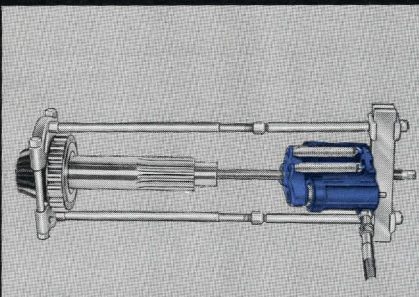
## TYPICAL MAINTENANCE JOBS FOR THE Y-1701 SET



Cup pulling attachment in use with hydraulic push-puller to remove oil seal.

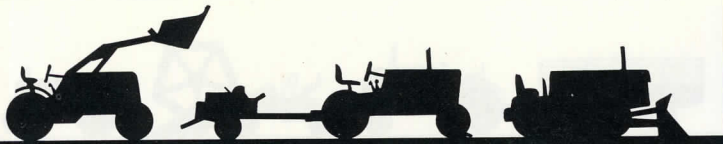


A hydraulically operated 2-jaw Grip-o-matic puller removing a gear box output shaft.



A bearing pulling attachment in use with hydraulic push-puller to remove bearing from shaft.



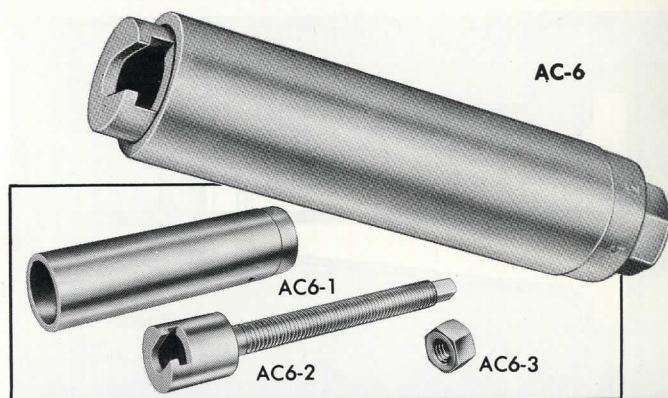


## ALLIS-CHALMERS WD-45 TRACTOR BRAKE PIN PULLER

### ● Remove brake pins quickly and easily

Here is an essential tool for servicing the WD-45 Allis-Chalmers farm tractor. The constantly recurring job of pulling the brake pin is a difficult one to accomplish without the proper tool. The No. AC-6 OTC puller consists of three parts: a pulling sleeve (No. AC6-1), and pulling screw (No. AC6-2) and a puller screw forcing nut (No. AC6-3). The brake pin removing operation is accomplished simply by attaching the slotted, gripping end of the AC6-2 to the brake pin, then turning down the forcing nut; as the nut is turned, transmitting its force to the sleeve, the pulling screw is retracted into the sleeve, thereby pulling the pin. An essential tool for every AC service shop!

**No. AC-6**—Allis-Chalmers WD-45 Brake Pin Puller



## ALLIS-CHALMERS BRAKE DRUM PULLER

Illustrations (right) show the set-ups for pulling WD-45 and D-17 gas and diesel model tractor brake drums by using a standard two-way three-way Push-puller equipped with 3 special leg ends, No. AC-627. A 2-leg set-up handles the D-14.

**No. AC-627**—Brake Drum Pulling Leg-Ends (3 req'd.)

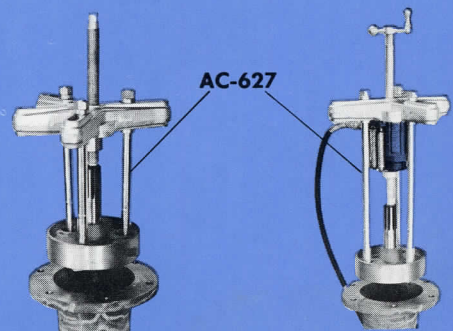
### OTHER OTC TOOLS USED

#### HYDRAULIC SET-UP

**Y938-HYD**—Hydraulic Two-way, Three-way Push-Puller  
**Y21-A**—Hydraulic pump, hose, gauge

#### MANUAL SET-UP

**Y938-HY**—Two-way, Three-way Push-Puller  
**938-2**—Puller forcing screw  
**938-3**—Forcing nut



Removing Brake Drum  
MANUAL SET-UP

Removing Brake Drum  
HYDRAULIC SET-UP

## FORD TRACTOR CYLINDER SLEEVE SPECIAL PULLER-INSTALLER SET, NO. 970-FT

These sets contain specially-designed tools for pulling and installing cylinder sleeves on all models of Ford tractors with speed, ease and safety. Both manually-operated and hydraulically-operated sets are available. Customers already having the OTC 17½-ton Power-Twin hydraulic ram and pump need order only the hydraulic set less hydraulics, No. 970-YFA.

Pulling adapter plates are included in the sets. (For Universal sleeve puller-installer sets, see P. 30, 31.)

**No. 970-HYFA**—Ford Hydraulic Sleeve Puller-Installer Set, complete with hydraulics, wt. 66½ lbs.

**No. 970-YFA**—Ford Hydraulic Sleeve Puller-Installer Set, less hydraulics, wt. 36½ lbs.

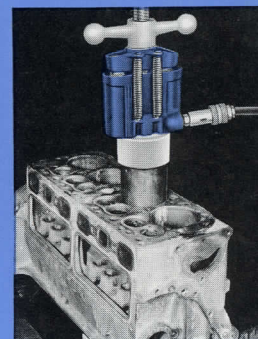
**No. 970-FT**—Ford Manually-Operated Sleeve Puller-Installer Set, wt. 35½ lbs.

### CONTENTS OF 970-FT SET

Pulling Tube . . . . . 973FT-2	Pulling Plate . . . . . 970-2FC	Adapter . . . . . 973FT-1
Pulling Tube . . . . . 973FT-2A	Pulling Plate . . . . . 970-5FC	Adapter . . . . . 973FT-1A
Pulling Tube . . . . . 973FT-2B	Pulling Plate . . . . . 970-8F	Adapter . . . . . 973FT-1B
Pulling Screw . . . . . 973-1	Thrust Bearing . . . . . 970-F	Hex Nut . . . . . 970H-1
Hex Forcing Nut . . . . . 970-E2	Thrust Washer . . . . . 970-G	Installing Yoke . . . . . 973FT-3



REMOVING SLEEVE  
with hydraulic set



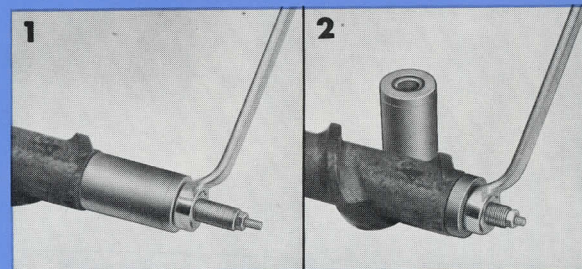
INSTALLING SLEEVE  
with hydraulic set



FT-499

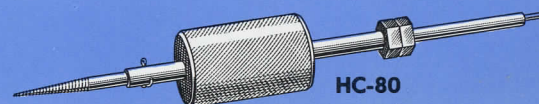
## SPECIAL FORD CORN PICKER SNAP ROLL BEARING PULLER, NO. FT-499

In a fraction of the time usually required, this special puller removes either the needle bearing or both bronze bushings from the Ford corn picker snap roll. Photos (right) show: (1) pressure being applied to forcing nut against the puller sleeve which causes internal expanding mandrel to pull the bearing, (2) pulling deep bearing to end position before inserting sleeve to duplicate Step 1.



## IHC CARBURETOR JET TOOL, NO. HC-80

Used to remove and install the new calibration seat for models M, MV, W-6, O-6 and OS-6; also to remove idling jets and main air bleed on E-12 1½" carburetor; does similar job on models Farmall H and 4 series tractor D-10 1" carburetor.

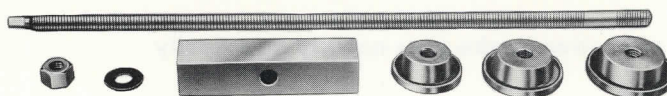
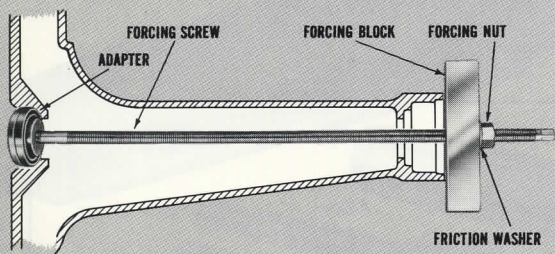


HC-80





## INSTALLING OIL SEAL IN JD REAR AXLE HOUSINGS



**JD-96**

Here is an essential set of tools designed to install the oil seal in the rear axle housings of all John Deere, Waterloo Line, tractors. Procedure: lubricate oil seal and place on proper oil seal installing adapter; place adapter and seal into oil seal bore, holding it in place while forcing screw is threaded into adapter through rear axle housing; place forcing block and friction washer over screw; place forcing nut on screw and when oil seal is properly aligned turn forcing nut until oil seal is in proper position. (See illustration, left)

**No. JD-96**—Rear Axle Housing Oil Seal Installer Set.

### INSTALLING BOTH BUSHINGS ON JOHN DEERE CUSTOM POWR-TROL UNITS

The job of installing both bushings on all custom Powr-trol units found on John Deere tractor models 520, 620, 720, 530, 630 and 730 is made easier by using this bushing and oil seal driver. The spacer, which is used with the driver, is the same dimension as the oil seal and when positioned correctly allows proper clearance while driving the bushings in place. Bushings should be positioned so that the oil hole can be located, otherwise redrilling of the oil hole in the bushing is necessary.

**No. JD-98**—Bushing and Oil Seal Driver.

### REMOVE-INSTALL FLYWHEEL LOCK-NUTS

Two wrenches have been designed to remove and install the flywheel lock-nut on all John Deere tractors with a minimum of effort. Wrenches are made from high alloy steel, scientifically heat-treated for greater strength and plated to prevent rust. Approved by John Deere service engineers and essential to every John Deere dealer.

**No. JD-99**—Flywheel Lock-nut Spanner Wrench, for tractor models R, 80, 820, 830 and 840.

**No. ED-1731**—Flywheel Lock-nut Wrench, for tractor models A, B, and all other models not requiring JD-99.

### REMOVE AND INSTALL POWER SHAFT LOCK-NUT IN MODEL 720 TRACTORS

This tubular spanner wrench provides a quick and easy method of removing and installing the power shaft lock-nut in John Deere model 720 tractors. Wrench has a  $\frac{3}{4}$ " female sq. drive end and can be used with any OTC  $\frac{3}{4}$ " sq. drive socket wrench handle.

**No. JD-97**—Power Shaft Lock-nut Tubular Spanner Wrench.

### REMOVE-INSTALL TRANSMISSION COUNTERSHAFT LOCK-NUT IN 720 TRACTORS

This tubular spanner wrench is an essential tool for removing and installing the transmission countershaft lock-nut in John Deere model 720 diesel tractors.

**No. JD-632**—Transmission Countershaft Lock-nut Wrench.

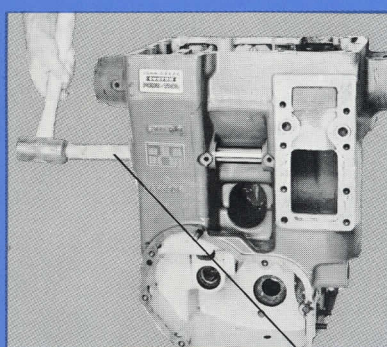
### SERVICING THE DUAL CLUTCH ASSEMBLY IN JOHN DEERE MODEL 420 TRACTORS

Here are three tools designed for servicing the dual clutch assembly on John Deere model 420 tractors equipped with constant running power take-off.

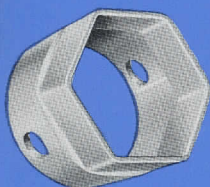
**No. JD-633**—Dual Clutch Aligning Tool—used to maintain alignment during assembly of the clutch, and insures proper installation of clutch assembly to the flywheel.

**No. FT-352**—Clutch Finger Gauge—used to locate and maintain position of the fingers while adjusting screws are tightened.

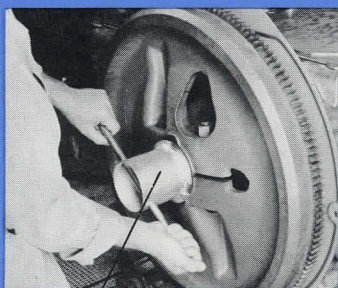
**No. FT-354**—Clutch Cap Screw Feeler Gauge—used to insure proper space between cap screw heads and secondary pressure plate.



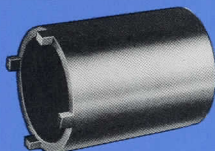
**JD-98**



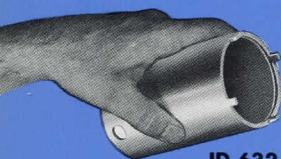
**ED-1731**



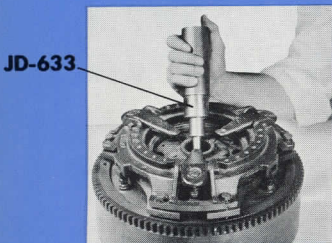
**JD-99**



**JD-97**

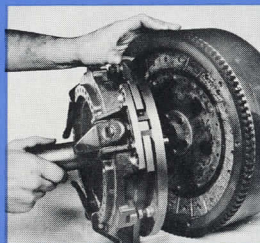


**JD-632**



**JD-633**

Assembly of the dual clutch.



Installation of clutch assembly to flywheel.



**FT-352**



**FT-354**





## ADJUSTING CARBURETOR WITH ENGINE RUNNING



JD-5

Here is a unique tool designed and built by OTC for adjusting the carburetor on all John Deere gasoline engine tractors . . . with the engine running. A flexible shaft inside hollow steel tubing and connected to a turning knob allows adjusting of carburetor without the operators hands actually touching the carburetor. The tool permits easy access to the carburetor and is 10" long, allowing plenty of distance between operator and hot engine. (Photo right)

No. JD-5—Carburetor Adjusting Tool.

### SERVICING JOHN DEERE CARBURETORS

**CARBURETOR SERVICE SET, NO. JD-90A**—Contains tools designed to make carburetor adjustments on John Deere tractor models A, B, G, GM, D and H.

#### CONTENTS OF SET, NO. JD-90A

Description	Tool No.
Jet remover for A, B, G, GM and D . . . . .	JD-80
Throttle bushing puller for H, A, B, G and D . . . . .	JD-81
Float Bender for A, B, G, GM and D . . . . .	JD-82
Bushing reamer for A, B, G, GM and D . . . . .	JD-83
Bushing reamer for H . . . . .	JD-84
Upper throttle bushing driver for H . . . . .	JD-85
Upper bushing driver for A, B, G, GM and D . . . . .	JD-86
Bowl vent baffle installation tool (not shown) . . . . .	JD-89
Metal case for holding contents of this set . . . . .	890

**CARBURETOR SERVICE SET, NO. JD-94**—Contains tools selected and designed to make carburetor adjustments on John Deere tractor models 50 and 60.

#### CONTENTS OF SET, NO. JD-94

Description	Tool No.	Description	Tool No.
Throttle bushing remover and installer . . . . .	JD-91	Square shank screw driver . . . . .	SS-84
Pilot tube installing tool . . . . .	JD-92	Screw starter . . . . .	727
Bushing reamer . . . . .	JD-93	Cold chisel . . . . .	CC-8
Round shank screw driver . . . . .	RS-63	Pin punch . . . . .	MP-3
		Metal case for set contents . . . . .	890

### REAMING VALVE GUIDES

Here is a tool designed to properly ream valve guides in John Deere gasoline starter engines; .246" to .247" in diameter.

No. JD-95—Valve Guide Reamer; 4" long.

### REMOVING VALVE SEATS FROM PUMPS

No. ED-1887-A—JD model R, Bosch Pump Valve Seat Removal Tool.

No. ED-1887-B—JD model R, Bendix Pump Valve Seat Removal Tool.

No. ED-1887-C—JD model 720, Bosch Pump Valve Seat Removal Tool.

### COMPRESSING PISTON RINGS

Here is a set of tools containing seven flexible bands and a pair of tongs for compressing piston rings from 2 1/2" to 6 3/4" in diameter.

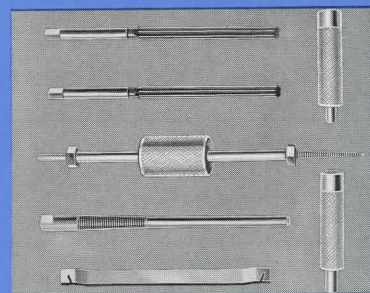
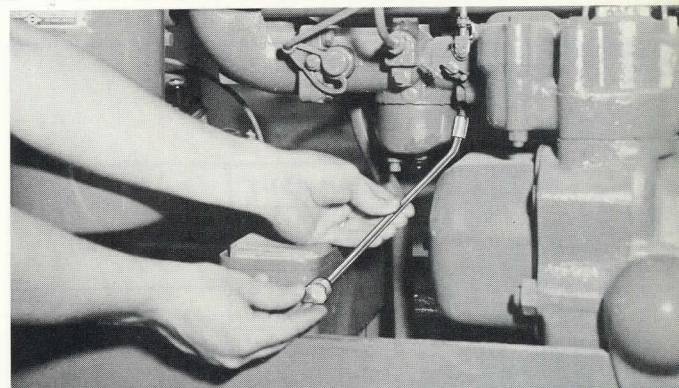
No. JD-869—Ring Compressor Set, containing 7 bands and a pair of tongs.

No. JD-869-B—Tongs only.

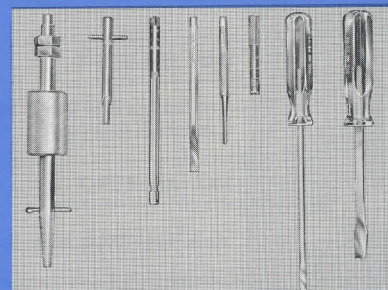
### SERVICING CLUTCH-TYPE DIRECTION REVERSER ON MODEL 420 & 440 TRACTORS

Here is an essential socket designed to remove and install the hub nut used in the clutch-type direction reverser on 420 and 440 series farm and crawler tractors. Socket has a 2 13/16" opening with a 1/2" female sq. drive end. When installing hub nut use OTC torque wrench No. S-200 with JD-4 socket and tighten nut to 175 foot pounds.

No. JD-4—Direction Reverser Hub-nut Socket.



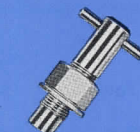
JD-90A



JD-94



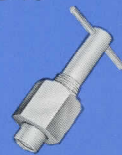
JD-95



ED-1887-A



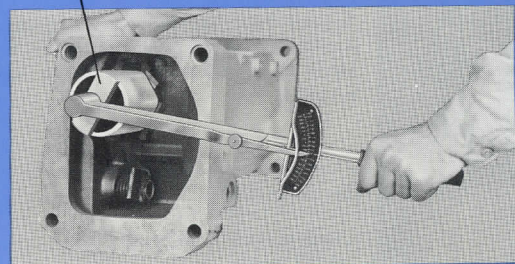
ED-1887-B



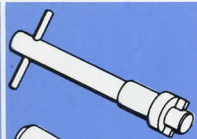
ED-1887-C

JD-869

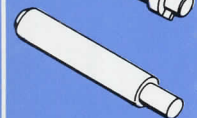
JD-4



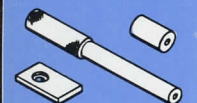


**SPECIAL SERVICE TOOLS FOR DUBUQUE LINE TRACTORS****NO. AM-450-T**

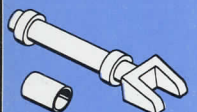
Oil Pump Timing Tool

**NO. AM-451-T**

Governor Shaft Bushing Driver

**No. AM-452-G**Set Gauge for  
Ring Gear Air Pinion Cone Point  
Setting**NO. AM-453-T**

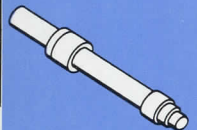
Set Gauge for Power Lift Check Valve

**NO. AM-454-T**

Set Gauge for Belt Pulley

**NO. AM-457-T**

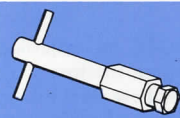
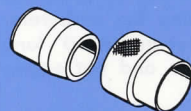
Driver for Front Axle Needle Bearing

**NO. AM-458-T**Set Gauge and Driver for  
Camshaft Bearings**NO. AM-459-T**

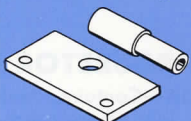
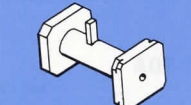
Axle Pivot Shaft Snap Ring Tool

**NO. AM-460-T**Brake Pedal and Brake Lock  
Shaft Snap Ring Tool**NO. AM-552-T**

Oil Filter Case Staking Tool

**NO. AM-553-T**Driver for Steering Gear  
Vertical Shaft Bushings**NO. AM-587-T**Special Tool Set No. 1 Containing  
Mandrels, Drivers and many of the  
other tools found on this page and  
page 19.**No. AM-2047-T**Touch-o-matic Rock Shaft Oil  
Seal Driver**No. AM-2048-T**Touch-o-matic Pressure Relief  
Valve Wrench**NO. AM-2774-T**

Rear Axle Oil Seal Loading Tool

**NO. AM-3998-T**Set Gauge and  
Driver for Clutch Throw-Out Bearing  
Carrier Sleeve (Formerly No. AM-  
456-T)**NO. AT-11487-T**Output Pinion Set Gauges  
(Formerly No. AM-452-T)**NO. M-600-T**Mandrel, Crank  
Shaft Front, Transmission Input Shaft,  
Belt Pulley Drive Shaft, Differential  
Quill Oil Seals.**NO. M-602-T**

Mandrel for Final Drive Shaft Oil Seal

**NO. M-603-T**Mandrel for Power Shaft Oil Seal  
and Differential Quill Oil Seal**NO. M-604-T**Mandrel for Steering Gear Cam  
(worm) Shaft Oil Seal**NO. M-605-T**Mandrel for Governor Operating  
Shaft and Touch-o-matic Control  
Lever Oil Seal**NO. M-606-T**Touch-o-matic Rockshaft Oil  
Seal Mandrel**NO. M-607-T**

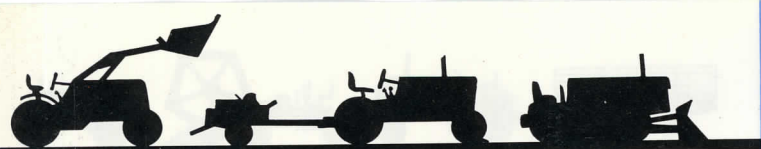
Touch-o-matic Pump Oil Seal Mandrel

**NO. M-611-T**

Clutch Pilot Bushing Driver


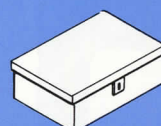







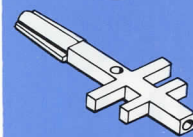


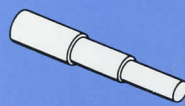

**NO. M-614-T**Touch-o-matic Pump Idler Gear  
Needle Bearing Driver**NO. M-615-T**Touch-o-matic Pump Drive Shaft  
Needle Bearing Driver





# SPECIAL SERVICE TOOLS FOR DUBUQUE LINE TRACTORS

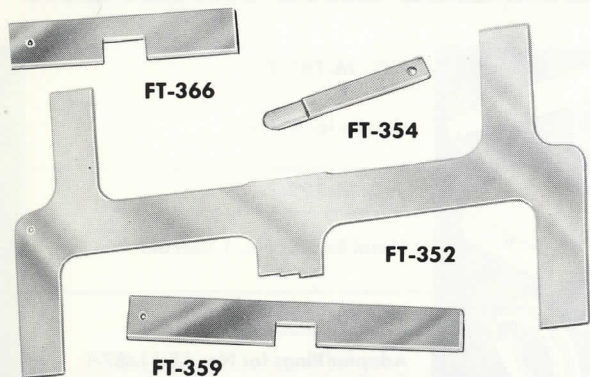
	<b>NO. M-616-T</b> Touch-o-matic Pump Cover Needle Bearing Driver
	<b>NO. M-617-T</b> Piston Pin Bushing Driver
	<b>No. M-618-T</b> Brake Pedal and Brake Shaft Bushing Driver
	<b>NO. M-620-T</b> Clutch Pedal Shaft Bushing Driver
	<b>NO. M-621-T</b> Power Shaft Bushing Driver
	<b>NO. M-623-T</b> Output Shaft Rear Bearing Cup Driver
	<b>NO. M-626-T</b> Front Pedestal Lower Oil Seal Mandrel
	<b>NO. M-650-T</b> Rear Axle Oil Seal Mandrel
	<b>NO. M-651-T</b> Pulley Shaft Oil Seal Mandrel
	<b>NO. M-657-T</b> Steering Gear Vertical Shaft Oil Seal Mandrel
	<b>NO. M-738-T</b> Crankshaft Rear Oil Seal Mandrel
	<b>NO. M-739-T</b> Front Pedestal Lower Bushing Driver
	<b>NO. M-743-T</b> Replacement Blade for No. AM-552-T Staking Tool
	<b>NO. M-790-T</b> Handle for 3/8" Pilot

	<b>NO. M-791-T</b> Handle for 3/8" Pilot
	<b>NO. M-792-T</b> Metal Box for No. 1 Tool Set
	<b>NO. M-1550-T</b> Adapter Rings for No. AT-11487-T Set Gauge
	<b>NO. M-2271-T</b> Final Drive Shaft Oil Seal Driver
	<b>NO. M-2272-T</b> Touch-o-matic Pump Drive Shaft Needle Bearing Driver
	<b>NO. M-2273-T</b> Touch-o-matic Pump Needle Bearing Driver
	<b>NO. M-2274-T</b> Rockshaft Oil Seal and Retainer Driver
	<b>NO. M-2275-T</b> Touch-o-matic Pump "O" Ring Seal Sleeve
	<b>NO. M-2276-T</b> Fan Adjusting Wrench
	<b>NO. M-2531-T</b> Belt Pulley Set Gauge
	<b>NO. M-2660-T</b> Track Roller Bushing Removal Driver
	<b>NO. M-2661-T</b> Track Roller Bushing Installing Driver
	<b>NO. M-4406-T</b> Bearing Carrier Sleeve Driver
	<b>NO. T-10744-T</b> Engine Lifting Eyebolt





## SPECIALLY DESIGNED TOOLS FOR MASSEY-FERGUSON



The following special tools are designed and manufactured specifically for servicing Massey-Ferguson equipment, through close cooperation between M-F and OTC engineers. All of the tools are for use on tractor models TO-35 and MH-50, unless otherwise specified. Every shop which services Massey-Ferguson equipment should have these time and labor-saving tools.

### OTC CLUTCH FINGER AND FEELER GAUGES

- No. **FT-352**—Dual-Clutch, Clutch Finger Gauge
- No. **FT-359**—Single-Clutch, Clutch Finger Gauge
- No. **FT-354**—Clutch Cap Screw Feeler Gauge
- No. **FT-366**—Dual-Clutch, Clutch Release Lever Gauge

### CLUTCH, CONNECTING ROD, VALVE TOOLS

- No. **FT-355**—Dual Clutch Aligning Tool
- No. **822**—Clutch Aligning Set
- No. **FT-350** and No. **FT-351**—Connecting Rod Bushing Driver Collars; Use with No. 813
- No. **813**—Mandrel; use with FT-350 and FT-351
- No. **FT-52**—Valve Guide Driver; use with valve guide gauges Nos. FT-53 and FT-54
- No. **FT-53** and No. **FT-54**—Valve Guide Gauges

### REAR AXLE BEARING PULLING TOOLS

- No. **930-F**—Special 30" long push-puller legs (pr.)
- No. **FT-485**—Pulling Attachment
- No. **FT-485C**—Leg-Positioning Yoke (for use on tractor models TO-35 and MH-50)
- No. **FT-485B**—Leg-Positioning Yoke (for earlier models)

### OTHER MASSEY-FERGUSON SERVICE TOOLS

- No. **FT-358**—Draft Monitor Spring Adjusting Wrench
- No. **FT-353**—Front Spindle Bushing Pulling Adapter
- Nos. **FT-364** and **FT-365**—Essential Spanner Wrenches, for servicing the Ferguson F-12 Baler transmission
- No. **FT-356**—P.T.O. Pinion Oil Seal Protector
- No. **FT-357**—Main Drive Pinion Oil Seal Protector
- No. **FT-360**—Installer for oil seal No. 50403
- No. **FT-361**—Installer for oil seal No. 195021M1
- No. **FT-362**—Installer for oil seal No. 195211M1
- No. **MH-671**—Transmission Bearing Holder, for use on MH tractor models 20 and 81
- No. **MH-670**—Differential Bearing Cup Puller, for use on MH tractor model 55

### MISCELLANEOUS FARM IMPLEMENT TOOLS

#### COTTON PICKER SPINDLE SOCKET, L2746-N

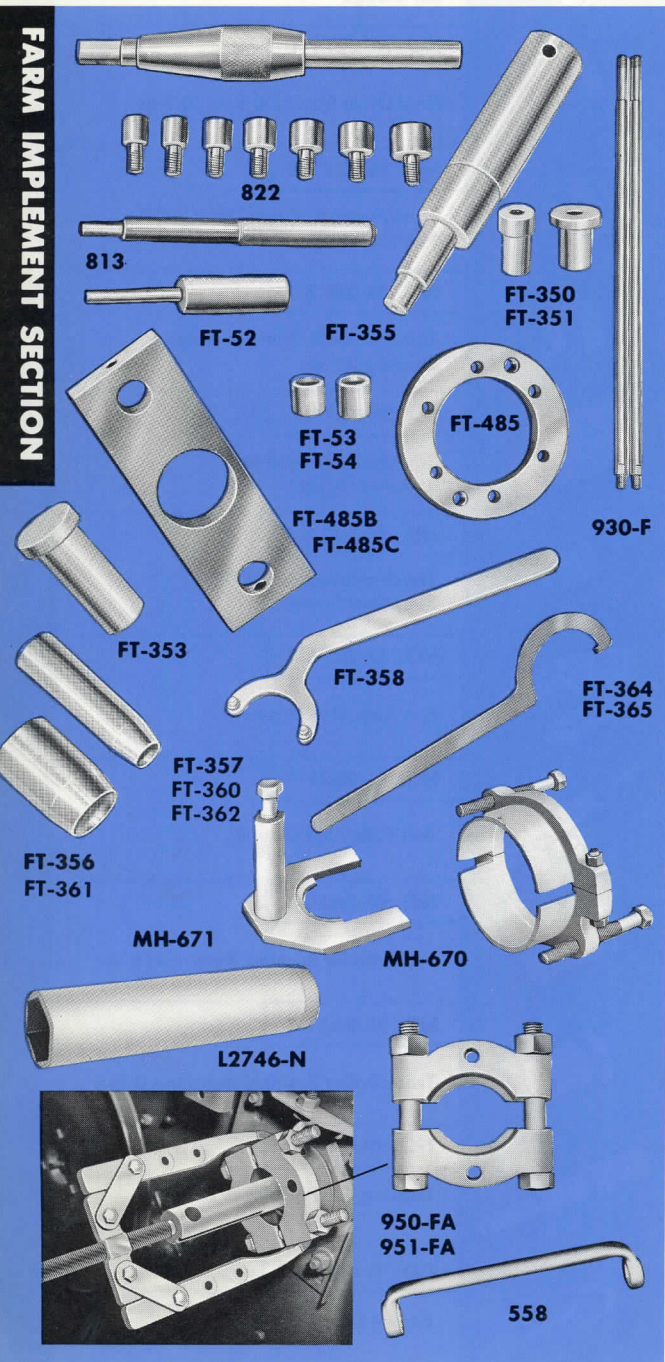
Built especially to remove and install cotton picker spindles, this No. L2746-N socket works efficiently on John Deere models as well as on other well-known makes. The socket is 6" long and has a 1 1/2" hex opening, 1/2" square drive.

#### TWO SPECIAL OTC ATTACHMENTS FOR PULLING FAFNIR FLANGETTE BEARINGS

- No. **950-FA**—Attachment with 3/8" tapped hole, for bearings from 3/8" to 1 1/2" I.D. Use with OTC No. 515 or No. 1001 pullers.
- No. **951-FA**—Attachment with 3/8" tapped hole, for bearings from 1 1/2" to 2 1/2" I.D. Use with OTC No. 927 or No. 1002 pullers.

#### "MM" HEAD BOLT WRENCH, OTC NO. 558

For torquing head bolts on Minneapolis Moline tractors. Wrench has 12-point, 1 1/8" opening and 1/2" square drive.







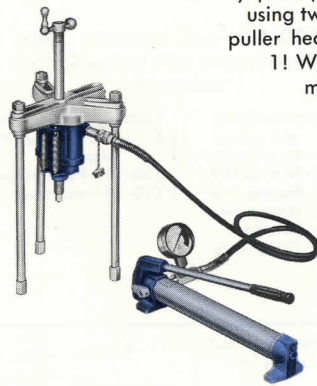
## puller sets

# SAVE DOWNTIME COSTS WITH SPECIAL OTC UNIVERSAL TRUCK HYDRAULIC MAINTENANCE SET, NO. Y-1702

- Reduce equipment downtime
- Reduce labor costs
- Reduce unnecessary replacement of parts

A versatile set of tools that includes all of the basic pullers, attachments and adapters required to remove and install gears, bearings, sheaves, shafts, bearing cups etc., on all makes and models of trucks. Set also contains a 17½-ton Power-Twin ram and manually operated hydraulic pump assembly which, when used with pullers and push-pullers, makes easy work of often difficult and time consuming pulling jobs, because hydraulic power is faster, requires less labor and in addition, eliminates torque. These tools will not become obsolete and will be as useful in the years to come as they are now. By low cost addition of specific items, tool investment can be kept to a minimum with this versatile OTC truck hydraulic maintenance set, useful also, on many other types of equipment.

When you work with OTC, you work with the best!



A versatile, hydraulically-operated 2-way 3-way push puller provides a choice of using two or three legs, with a single puller head. Like having 2 pullers in 1! When using a pulling attachment with the two-leg set-up, the push puller closely resembles a hydraulic shop press . . . with the push puller legs acting as the press uprights and the pulling attachment acting as the press bed. Ram and pump are detachable for use in powering other OTC pullers and equipment.

## CONTENTS OF SET, NO. Y-1702

Description	Tool No.
17 ½-TON capacity hydraulic 2-way 3-way push-puller with 16 ½" legs . . . . .	Y938-HYD
Push-puller legs, 22 ½" (3) . . . . .	930-C-1
Push-puller legs, 9 ½" (3) . . . . .	930-D-1
Push-puller legs, 4 ½" (3) . . . . .	930-E-1
Manually-operated hydraulic pump with hose; half coupler; gauge and tee . . . . .	Y21-A
3-jaw Grip-o-matic puller assembly for use with 17 ½-ton ram . . . . .	1013 ½-LY
2-jaw Grip-o-matic puller head . . . . .	1003 ½-2H
Combination 2-way 3-way puller . . . . .	1011-A
Combination 2-way 3-way puller . . . . .	1012-A
Long jaws for 1012-A (3) . . . . .	1002L-1
Combination 2-way 3-way puller . . . . .	1013-A
Plain-hole 17 ½-ton ram head insert . . . . .	Y15-2D
Jack screw (for 17 ½-ton ram) . . . . .	Y15-14

Description	Tool No.
Pushing adapter, ½" shank . . . . .	938-14
Pushing adapter, ¾" shank . . . . .	938-15
Pulling attachment . . . . .	950
Pulling attachment . . . . .	951
Pulling attachment . . . . .	952-A
Short bolts for 952-A (2) . . . . .	952-3
Sheave pulling attachment . . . . .	679
Sheave pulling attachment . . . . .	680
Bearing cup pulling attachment . . . . .	943-E
Long jaws for 943-E (2) . . . . .	943-A1
Pilot bearing puller . . . . .	954
Long jaws for 954 (2) . . . . .	955-14
Slide hammer puller . . . . .	960
Gear and pulley puller . . . . .	515
Short forcing screw for 515 . . . . .	515-T
Set of 6 female threaded adapters . . . . .	919

Description	Tool No.
Female threaded adapter; ¾"-16 . . . . .	924
Adapters; F. ¾"-18 x M. ¾"-24 (2) . . . . .	144M
Adapters; F. ¾"-18 x M. ¾"-16 (2) . . . . .	15-M
Adapters; F. ¾"-18 x M. ¾"-20 (2) . . . . .	16-M
Adapters; F. ¾"-18 x M. ¾"-13 (2) . . . . .	17-M
Adapters; F. ¾"-18 x M. ¾"-11 (2) . . . . .	20-M
Adapters; F. ¾"-18 x M. ¾"-16 (2) . . . . .	24-M
Adapters; F. ¾"-18 x M. ¾"-10 (2) . . . . .	25-M
Adapters; F. ¾"-18 x M. ¾"-14 (2) . . . . .	32-M
Adapter; F. 1"-8 x M. ¾"-18 . . . . .	32-R
Adapter; F. 1"-8 x M. 1"-14 . . . . .	32-S
Set of 6 shaft protectors . . . . .	625-A
Set of 11 step plate adapters . . . . .	630-S
Set of 6 step plate adapters . . . . .	630-T
Snap ring plier . . . . .	614

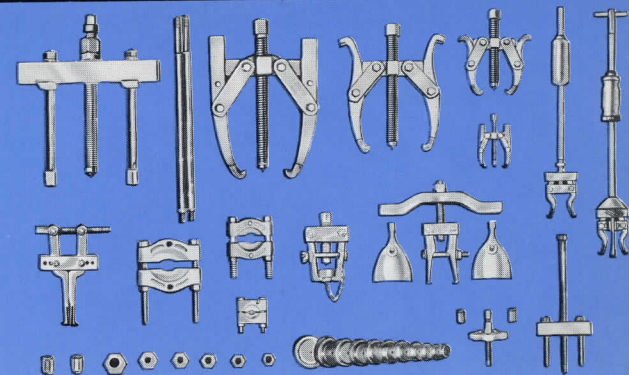
## AUTOMOBILE AND LIGHT TRUCK MAINTENANCE SET, NO. PA-22

This versatile set contains all of the pullers, attachments, adapters and accessories required to remove and install gears, bearings, shafts, pinions bearing outer races and other tightly fitted parts. Each puller is adjustable to cover a wide range of sizes allowing this set to operate on all makes and models of automobiles and light trucks without becoming obsolete with model changes.

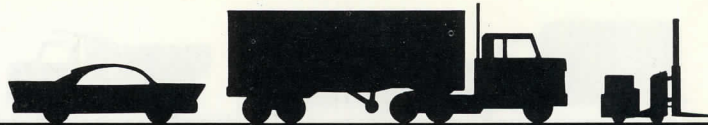
## CONTENTS OF SET, NO. PA-22

Description	Tool No.
2-jaw Grip-o-matic puller . . . . .	1000 ½-L
2-jaw Grip-o-matic puller . . . . .	1001
2-jaw Grip-o-matic puller . . . . .	1002
2-jaw Grip-o-matic puller . . . . .	1003
Push-puller with 6 ¾" legs . . . . .	927
Push-puller legs, 15 ¾" (pr.) . . . . .	927-B
Pulling attachment . . . . .	949 ½
Pulling attachment . . . . .	950
Pulling attachment . . . . .	951
Slide hammer puller . . . . .	960

Description	Tool No.
Bearing cup pulling attachment . . . . .	943-B
Pilot bearing puller . . . . .	954
Pinion shaft puller . . . . .	944-G
Gear and pulley puller . . . . .	515
Steering wheel puller . . . . .	915-A
Pitman arm puller . . . . .	HC-642
Set of 11 step plate adapters . . . . .	630-S
Push-puller leg connectors (2) . . . . .	916
Set of 6 female threaded adapters . . . . .	919







## HENDRICKSON TRUCK EQUALIZER-BEAM SERVICE PRESS

- Save hours of time and labor removing and installing rubber bushings on Equalizer Beam in "R" Series
- Service both center and end bushings; service center bushings without removing tires or wheels
- Hendrickson Tandems are in use on leading makes of heavy duty trucks such as Chevrolet, Diamond T, Dodge, Ford, FWD, IHC, Mack, Harris, White, etc.

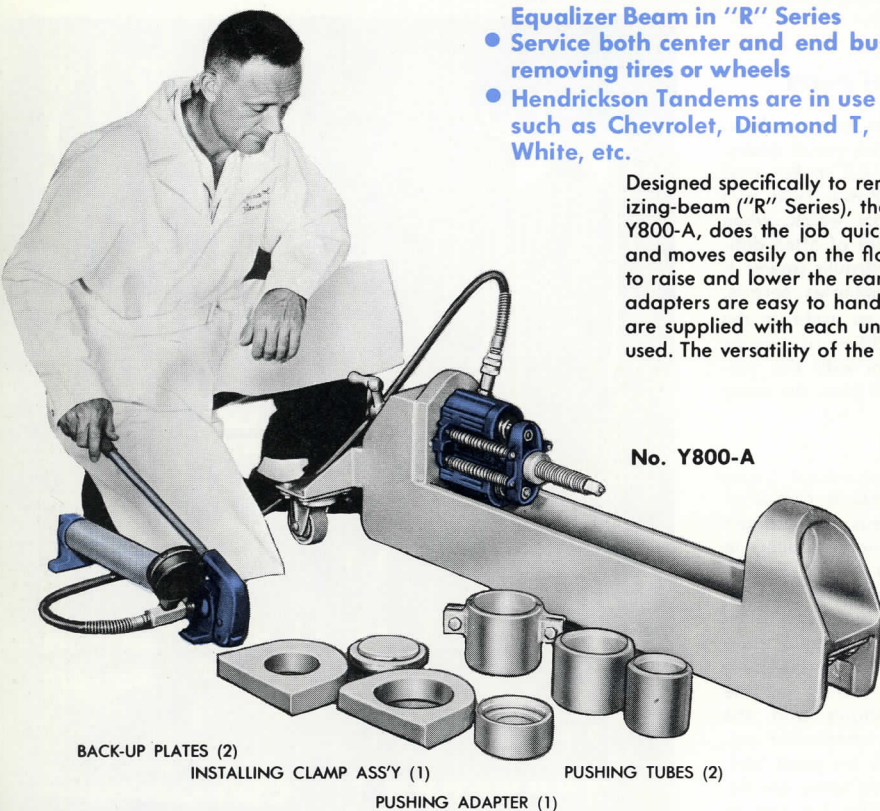
Designed specifically to remove and install bushings on Hendrickson equalizing-beam ("R" Series), the new OTC 30-ton capacity hydraulic unit, No. Y800-A, does the job quickly and easily. The press is mounted on casters and moves easily on the floor. (Railroad jack or equivalent should be used to raise and lower the rear cross member of the truck.) Special yet simple adapters are easy to handle. Complete step-by-step operating instructions are supplied with each unit. Drawings below indicate how the tools are used. The versatility of the OTC "Power-Twin" hydraulics is an extra bonus,

since the ram and pump are detachable for use with standard OTC pullers and shop presses. Customers already having OTC 30-ton hydraulics (\*), need order press and adapters only—No. Y-800.

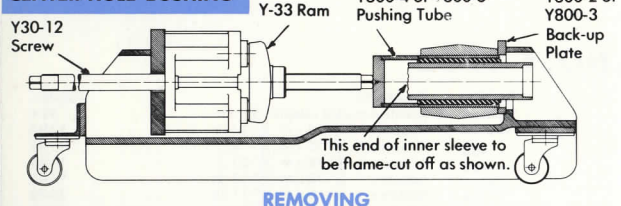
**No. Y800-A—Truck Equalizer Beam Service Press, complete with hydraulics\*.**

### CONTENTS:

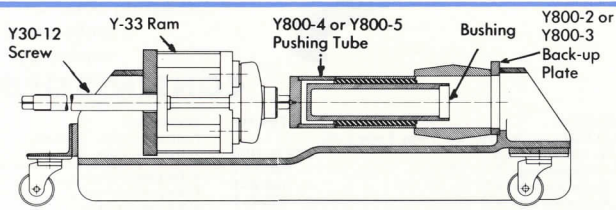
- |                                 |                             |
|---------------------------------|-----------------------------|
| Y800-1—Press Frame with casters | Y800-9—Pushing Adapter      |
| Y800-2—Back-up Plate            | Y-33—30-ton Ram-Pump Ass'y. |
| Y800-3—Back-up Plate            | Y30-12—Puller Screw         |
| Y800-4—Pushing Tube             | Y30-13—Adjusting Crank      |
| Y800-5—Pushing Tube             |                             |
| Y800-6—Installing Clamp Ass'y.  |                             |



### CENTER-HOLE BUSHING

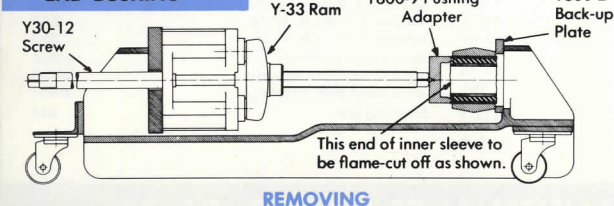


### REMOVING

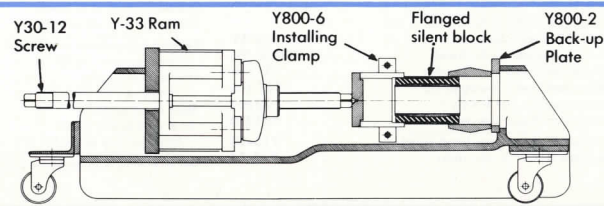


### INSTALLING

### END BUSHING

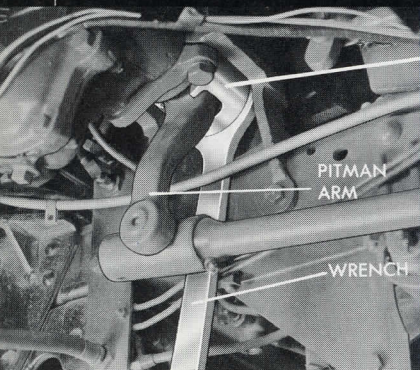


### REMOVING



### INSTALLING

## SPECIAL TRUCK PITMAN ARM PULLER SET



### PULLER CONSISTS OF:



The boxed-in area in which the pitman arm is located on IHC Cab-Over model trucks (as well as other makes of trucks with similar pitman arms) requires the use of a special puller for removing the arm from the steering gear levershaft without damage. This special set includes two puller bodies for various pitman arms and three special puller hex nuts to fit the steering gear levershaft thread size. Use any appropriate size wrench to turn the hex nut which transmits power to the puller.

### No. 1600—Truck Pitman Arm Puller set

- |                              |                                  |
|------------------------------|----------------------------------|
| Contents:                    | Hex Nut, 1"-14 .... No. 1600-2   |
| Large Puller Body No. 1600-3 | Hex Nut, 1 1/8"-12 .. No. 1600-4 |
| Small Puller Body No. 1600-1 | Hex Nut, 1 1/2"-14 .. No. 1600-5 |

No. 1601—For IHC S-30 and comparable; contents: Nos. 1600-1 & 1600-2

No. 1602—For IHC S-35 and comparable; contents: Nos. 1600-3 & 1600-4

No. 1603—For IHC S-40 and comparable; contents: Nos. 1600-3 & 1600-5





## TRUCK-BUS-CAR KING PIN SPECIAL PUSHER-INSTALLER

•Save hours of time and labor; no heating or sledging

No more long hours for removing tough king pins!—Now, it's a quick and easy job that takes only minutes to push out the toughest of king pins with an OTC 17½-ton capacity hydraulic king pin pusher-installer. Removing and installing king pins on buses, trucks and cars becomes a routine operation and a more profitable one on a flat rate basis. The powerful, smooth-operating hydraulic power, with simple, easy-to-use attachments, eases out the toughest of king pins without makeshift methods of heating and damaging sledging—and with no damage or distortion to the axle. OTC hydraulic ram and manually-operated pump are detachable for use with other OTC pullers and hydraulic shop presses.

**No. Y99-A**—Hydraulic King Pin Pusher-Installer, complete with hydraulics \*.

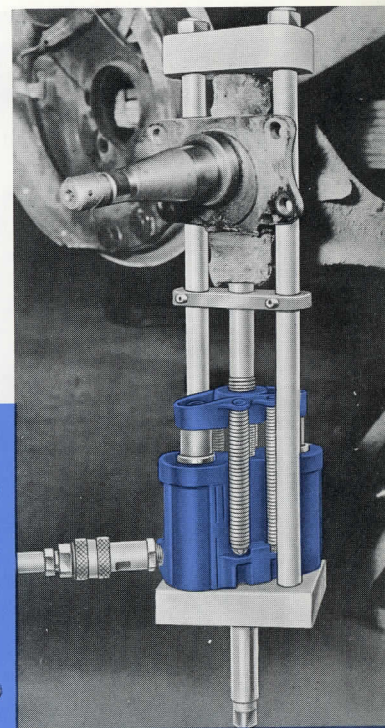
**No. Y-99**—Hydraulic King Pin Pusher-Installer, less hydraulics .

### CONTENTS OF Y99-A SET

Ram support plate . . . . . Y99-1  
Legs (2 req'd.) . . . . . Y99-2  
Truck adapter plate . . . . . Y99-3  
Ford car adpt. plate . . . . . Y99-4

Reducing bushing . . . . . Y99-5  
Adjusting screw . . . . . Y99-6  
Short forcing pin . . . . . Y99-7  
Long forcing pin . . . . . Y99-8

Guide plate . . . . . Y99-9  
Hex nut ¾"-18 . . . . . Y99-10  
\*17 ½-ton "Power-Twin"  
ram and pump . . . . . Y-18



## NEW BALL JOINT SUSPENSION SOCKETS

For removing and installing the ball joints from the upper and lower "A" frame on Chrysler-built cars. Sockets have ¾" square drive.

**No. 650**—1 ½" Socket, for late model Plymouth, Dodge

**No. 651**—2 ½" Socket, for late model Chrysler, DeSoto

## BALL JOINT SUSPENSION WRENCHES

For adjusting caster and camber on ball joint suspensions.

**No. 652**—Wrench for late model Ford cars

**No. 653**—Wrench for late model Mercury cars

**No. 654**—Wrench for late model Lincoln cars

**No. 655**—Wrench for late model Rambler cars

## CASTER CAMBER WRENCH SET, NO. 582-T

Serves most older model cars that do not have ball joint suspension, including Ford, Chevrolet, Pontiac, Cadillac, Hudson and others. Set contains the following:

**No. 432**—1 ¾" Ford caster wrench

**No. 433**—1 ¾" Ford camber wrench

**No. 536**—1 ¾" Chrysler-Hudson  
camber wrench

**No. 537**—1 ¾" Chrysler camber  
wrench

**No. 538**—1 ¾" Cadillac and Olds  
camber wrench

**No. 539**—1 ½" "1952" Ford  
camber wrench

**No. 581**—1 ¼" Pontiac camber  
wrench

**No. W-6**—¾" Allen wrench

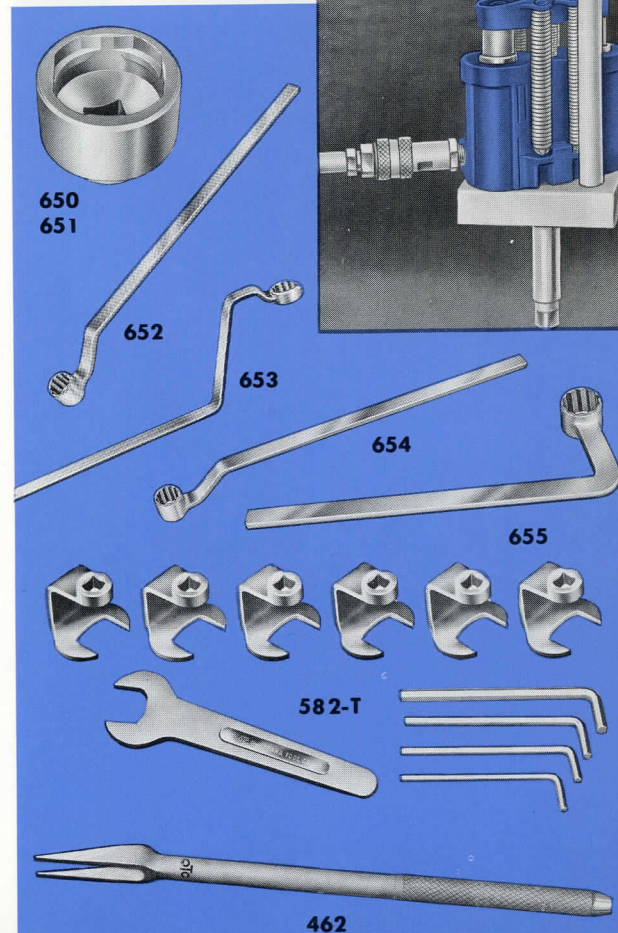
**No. W-7**—½" Allen wrench

**No. W-8**—¼" Allen wrench

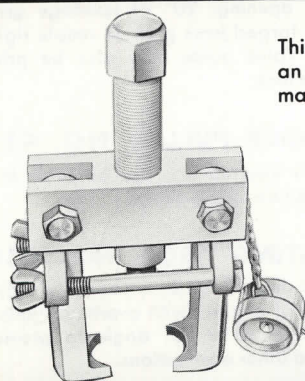
**No. W-10S**—¾" Special Allen  
wrench

## SHOCK LINK, TIE ROD SEPARATOR, NO. 462

Separates shock absorber links and tie rods quickly and easily. Tool is 16" long, ¾" between tines. Tapered wedge-end is inserted between parts to be removed, then handle-end is hit with a hammer; wedging action forces the parts apart.



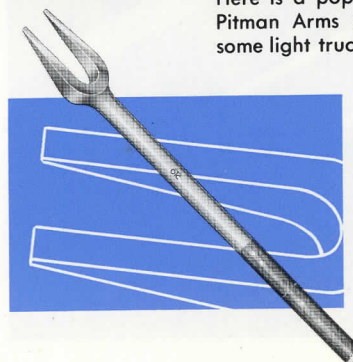
## PITMAN ARM PULLER



This rugged, well-built tool makes an easy job of pulling truck Pitman Arms and also works on most autos including Ford, Chevrolet, Plymouth, Buick, Dodge, Pontiac, Oldsmobile and DeSoto. Tool can also be used to pull older model Ford wheel hubs.

**No. HC-642**—Special Pitman Arm Puller; wt. 4 ¾ lbs.

## PITMAN ARM WEDGE



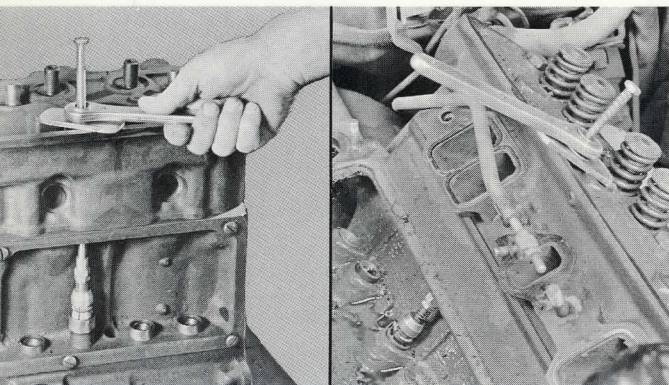
Here is a popular OTC tool for removing Pitman Arms on all passenger cars and some light trucks. Tool is 11" long and 1 ½" between the tines. The wedge-end of the tool is placed between the parts to be separated and a few sharp blows with a hammer on the end of the wedge-handle creates the wedging action which separates the parts. Has many other uses.

**No. 844**—Special Pitman Arm Wedge Tool

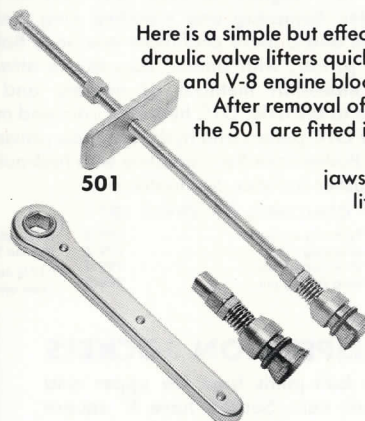




# OTC HYDRAULIC VALVE LIFTER PULLER SET, NO. 501



## • Saves hours on tough, stubborn jobs!



Here is a simple but effective tool designed to remove hydraulic valve lifters quickly and easily from both straight and V-8 engine blocks. (See photos, left) Procedure:

After removal of the lifter spring clip, the jaws of the 501 are fitted into the spring clip groove of the lifter. As pressure is applied, the jaws of the tool expand and grip the lifter tightly, thereby allowing the lifter to be withdrawn easily.

Tool is plated to withstand corrosion, and all critical components are made from alloy steel and fully heat-treated for maximum strength and durability.

## OTC STUBBY VALVE LIFTER, NO. A-150

A screw-type valve lifter ideal for work on L-head engines. Gets in easily around manifolds, carburetors, fuel lines, fuel pumps, tappet lid studs, etc. Top jaws are adjustable for various spring sizes. Jaws remain parallel at all times with a maximum lift of 2 3/4" and approximately 300 lbs.

## POPULAR OTC "C" CLAMP VALVE LIFTERS

These valve lifters feature: Toggle-action, self-locking handles; threaded full length, screw adjusting posts for maximum capacity; and heat-treated crank pin for fast action. Made of tempered spring steel and plated to prevent rust.

**No. CF-11**—Designed to work on most makes and models of cars, and small busses, trucks and tractors. Clearances: 10 1/4" high, 9 1/2" wide. Includes three jaws: CF-21, CF-22C, CF-23.

**No. CF-16**—Designed for working with manifolds in place. Has greater reach and leverage than CF-11. Clearances: 10 1/2" high, 12" wide. Includes three jaws: CF-21, CF-22C, CF-23.

**No. CF-17**—Designed for work on high compression engines with V-8 block and overhead valving, without removing manifold. Clearances: 8 1/2" high, 7" wide. Complete with CF-22C jaws.

**No. CF-21**—Straight jaws; 3/8" to 1 1/8" spring dia. capacity.

**No. CF-22B**—High offset jaws; 1"-2" spring dia. capacity.

**No. CF-22C**—Med. offset jaws for OHV work; 1"-2" spring dia. capacity.

**No. CF-23**—Straight jaws; 1 1/2" to 2 3/4" spring dia. capacity.

## OTC VALVE LOCK REPLACER, NO. 851-A

An essential tool for removing and installing split valve keys or locks. Gets into tight places and holds split keys firmly until positioned and the valve spring is released.

## FORD VALVE SPRING COMPRESSOR, NO. 413

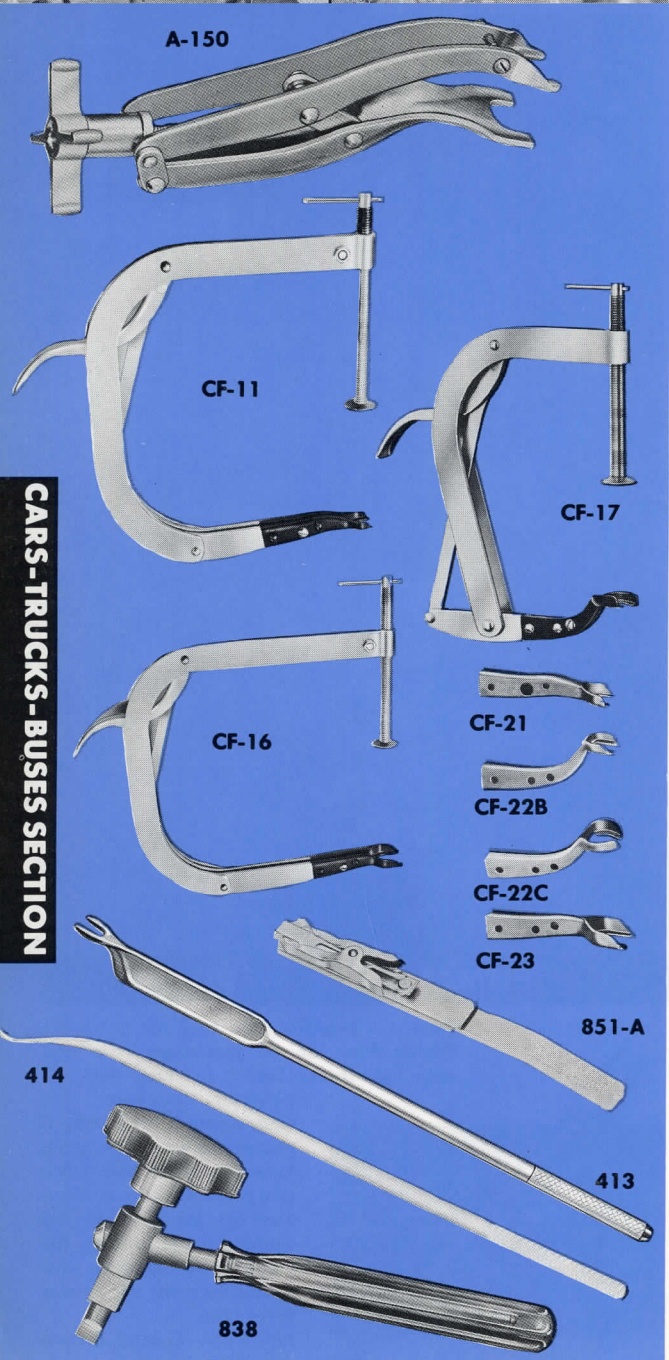
Here is a tool designed to compress Ford valve springs by prying on the side of the valve port opening. 20" of leverage gives adequate power while the drop-forged jaws provide ample rigidity to lift the toughest valves. Valve guide may also be pried down to gain access to the guide lock.

## FORD VALVE GUIDE LOCK PULLER, NO. 414

Tapered hook end of this tool is inserted into eye of guide lock and with a quick prying action, guide lock is pulled.

## VALVE TAPPET ADJUSTING TOOL, NO. 838

This tool is designed for use with any 1/2" sq. drive socket to adjust tappets on all makes and models of engines with overhead valves. Burn-resistant plastic handle is set at a 15° angle to provide clearance over hot manifolds and other obstructions.



CARS-TRUCKS-BUSES SECTION





## OTC AUTO-TRUCK RATCHETING RING COMPRESSORS

● Ratcheting action permits compressing piston rings safely and easily and holding pressure constant until piston is installed.

An outstanding improvement in ring compressors, the "ratcheting" type can save time and reduce the danger of damaging rings during installation. Ratchet pawl is easily depressed to release tension. An automatic friction brake can be adjusted and controlled by two screws on either side of the ratchet pawl. Nos. 849 and 849-T are for cars and trucks. No. 850-T (6½" long overall) is for trucks and is designed to compress all the rings at once thus eliminating the need for two compressors or changing the setting if one short one is used. Larger sizes up to 15" diameter are also available.

**No. 849**—Ratcheting Ring Compressor, 2½" to 5" dia. capacity  
**No. 849-T**—Ratcheting Ring Compressor, 3½" to 7" dia. capacity  
**No. 850-T**—Truck Ratcheting Ring Compressor, 3½" to 7" dia. capacity

### PISTON RING COMPRESSOR, NO. 868

Built of Swedish Blue spring steel with a compression tape also made from the same material, this ring compressor is inexpensive yet does an excellent job. The band is flared at the bottom to prevent the compressor from entering the cylinder when the piston is pushed down. Has 2½" to 5" dia. capacity.

### SPECIAL OTC PISTON RING COMPRESSOR FOR "SKIRTED" PISTONS. NO. 843

Designed for 1955 through late model Chevrolet V8 engines and all other engines with skirted pistons. Covers all rings at one time and will not form oval or egg shape around the piston skirt. Beads around the bottom keep compressor from entering the cylinder.

### OTC PISTON RING EXPANDER, NO. 616

Here is a specially designed tool to handle piston rings of all sizes from power mowers to diesel tractors . . . and can be used for both removing and installing. Flat gripping edges will not damage rings or pistons. Weighs only 5 ounces.

### DELCO DISTRIBUTOR WRENCH, NO. D-10

An extremely popular tool, this special hollow-shaft, plastic-handled wrench removes the lock nut when changing the points on 1953 through current model Delco distributors. Stubby 2½" length assures fast, easy operation in close quarters.

### CARBURETOR-DISTRIBUTOR ADJUSTING TOOL FOR G M CARS, OTC NO. 500

This essential tool permits the adjusting of carburetor and distributor setting on GM cars while the engine is running and without removing the carburetor air cleaner. The working end of this 18" long tool turns as the knob on the end of the handle is turned. A hex key fits in the working end for adjusting the distributor, interchangeable with a special socket which is inserted for adjusting the carburetor. (See insets.)

### DISTRIBUTOR LOCK NUT WRENCHES

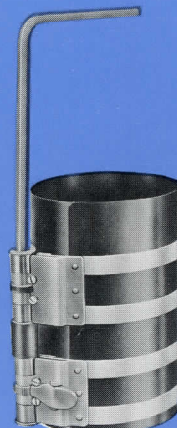
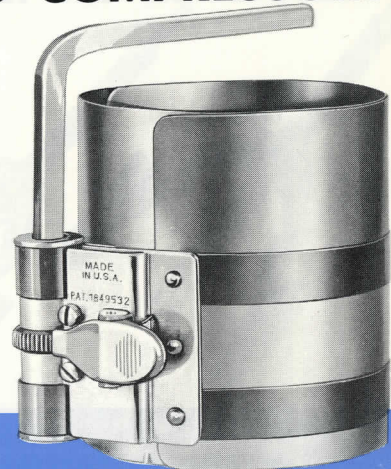
Here are five 12-point opening, box wrenches designed especially to work on distributor lock nuts of late model cars.

- No. 419**—½" opening, for Ford, Mercury
- No. 505**—½" opening, for Cadillac, Studebaker
- No. 506**—¾" opening, for Buick, Pontiac, Oldsmobile
- No. 508**—½" opening, for Plymouth, Dodge, DeSoto, Chrysler, Imperial
- No. 509**—¾" opening, for Chevrolet

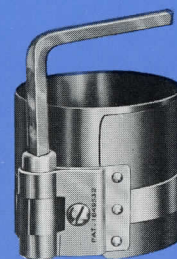
### FORD GENERATOR WRENCH, NO. 434

A recent development by OTC, this special wrench is designed for removing the generator from the mounting brackets by removing the mounting bolts. For use on all Ford cars.

849  
849-T

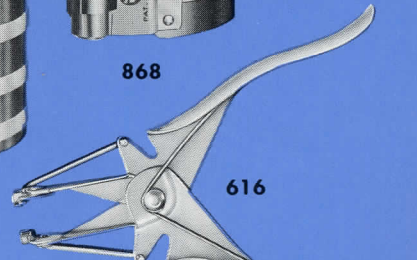


850-T

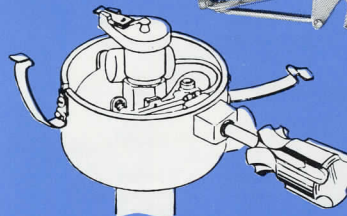


843

868



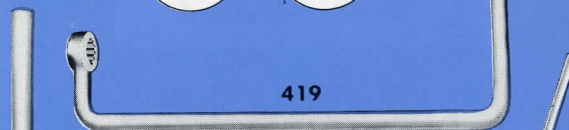
616



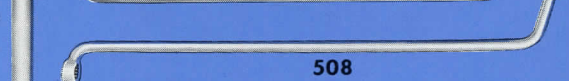
D-10



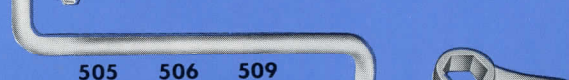
500



419



508



505

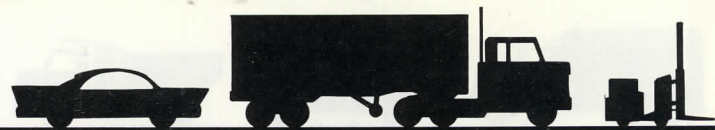
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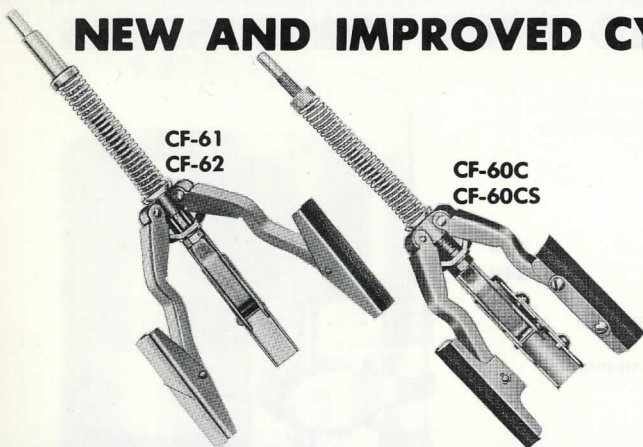


434





## NEW AND IMPROVED CYLINDER DE-GLAZING HONES



- **Fast and convenient, self-centering and flexible drive, for resurfacing over a wide range of sizes with the same tool.**

**No. CF-60C**—Adjustable Spring-tension Abrasive Cloth Hone, with three 3" med. grit cloths; capacity 2" to 5 1/4".

**No. CF-60C-1**—6 sets of 3 replacement cloths for CF-60C.

**No. CF-60CS**—Adjustable Spring-tension Abrasive Stone Hone, with 3" med. grit stones & wiper pad; capacity 2" to 5 1/4".

**No. CF-61**—Non-adjustable Spring-tension Abrasive Stone Hone, with 3" med. grit stones & wiper pad; capacity 2" to 5 1/4".

**No. CF-61-12S**—Medium grit stones & wiper pad set for CF-60C, CF-60CS, CF-61 or CF-62.

**No. CF-61-14S**—Fine grit stones & wiper pad set for CF-60C, CF-60CS, CF-61 or CF-62.

**No. CF-62**—Non-adjustable Spring-tension Abrasive Stone Hone, with 4" med. grit stones & wiper pad; capacity 2" to 7".

**No. CF-62-12S**—Med. grit stone & wiper pad set for CF-62.

**No. CF-62-14S**—Fine grit stone & wiper pad set for CF-62.

## SPECIAL OTC HEAD BOLT WRENCHES

Essential wrenches for torquing head bolts on car, truck and tractor engines to the correct, manufacturer's specifications.

For Use On	Opening Size	Drive	Tool No.
Buick, 1955 thru current models	3/4" 12 pt.	1/2"	503
Buick, early models thru 1954 & Intl. trucks	3/4" 12 pt.	1/2"	556-A
Chevrolet cars and trucks, 1950 thru 1954	1/2" sq. tang	1/2"	555
Ford, 1946 thru 1953	1/2" 12 pt.	1/2"	554
Ford-Mercury, 1954 (use with wrench No. 421)	1/2" 12 pt.	1/2"	420
Ford-Mercury, 1954 (use with wrench No. 420)	1/2" 12 pt.	1/2"	421
Lincoln, 1952 thru 1954	3/4" 12 pt.	1/2"	553
International trucks	3/4" open end	1/2"	552
AC 779 & 844 series engines (use with 560)	1 1/8" 12 pt.	3/4"	559
AC 779 & 844 series engines (use with 559)	1 1/8" open end	3/4"	560
Minneapolis Moline tractors	1 1/8" 12 pt.	1/2"	558

## SPARK PLUG HOLE THREAD CHASERS

Here are two tools designed to remove carbon from the spark plug holes, insuring more accurate fit and better performance, as well as restoring damaged threads. Four popular thread sizes are combined in these two chasers.

**No. M-1014**—Chaser; 10 MM x 14 MM threads.

**No. M-1828**—Chaser; 18 MM x 7/8"-18 threads.

## HEAD GASKET ALIGNING SET

Here is a set of tools designed for fast, accurate placement of head gaskets and cylinder heads. Three dowels placed in the block give added protection to the gasket and three-point alignment for block-gasket assembly. Head bolts start easily. Spring activated retriever removes the dowels without unscrewing.

**No. CF-83**—Head Gasket Aligning Set; parts listed below.

**No. CF-83-1**—Spring Steel Retriever.

**No. CF-83-2**—Set of three dowels; 3/8" bolt size.

**No. CF-83-3**—Set of three dowels; 1/2" bolt size.

## NEW FORD MANIFOLD NUT WRENCH

An essential wrench for removing and installing the nuts located at the rear of the manifold, both left and right bank, on Ford V-8 engines, 1954 thru current models.

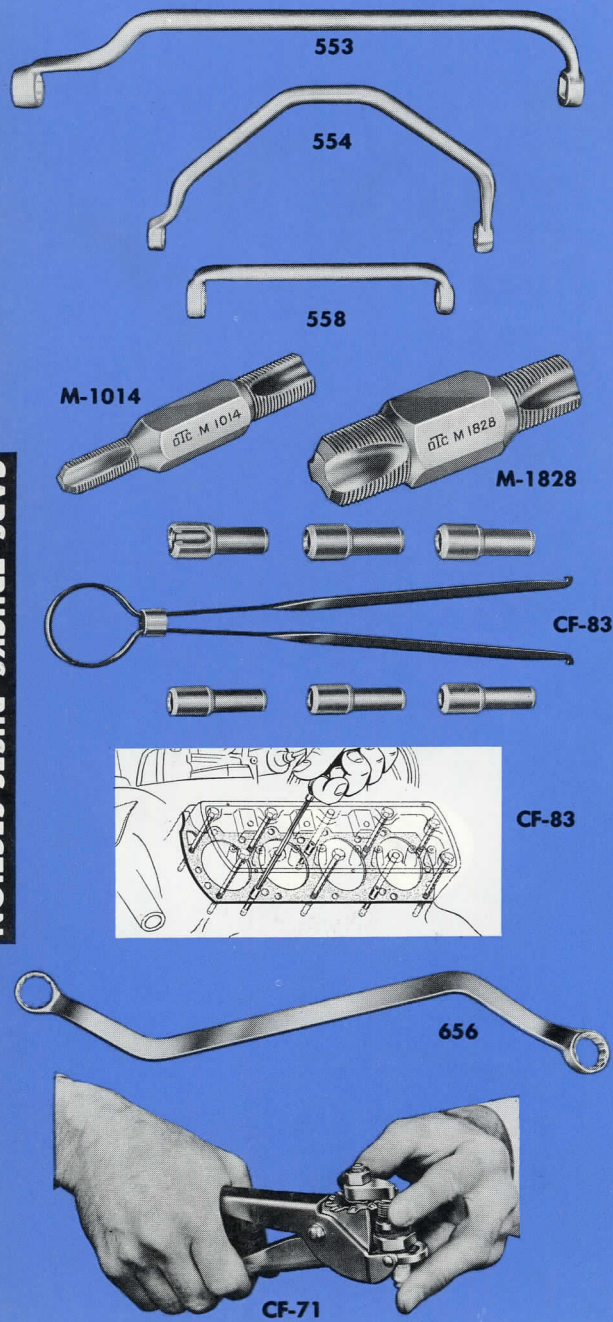
**No. 656**—Ford Manifold Nut Wrench; 3/4" 12 pt. openings.

## OTC SPARK PLUG GAPPING TOOL

Designed for fast, accurate uniform gapping of spark plug points on all makes of cars. Easy to read numbers on a spring steel gauge wheel, adjustable to correct electrode settings: .022, .025, .026, .028, .030, .032, .035, .036, .038, .040.

**No. CF-71**—Spark Plug Gapping Tool.

**No. CF-71-1**—Replacement Gauge Wheel for CF-71.







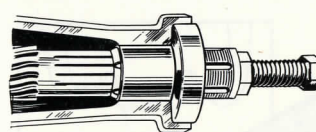
## TRANSMISSION BUSHING AND OIL SEAL PULLER SETS

### • Complete repair job in fifteen minutes

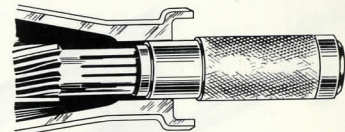
Here are two sets of tools designed to remove the transmission bushing and oil seal simultaneously, and to install these parts in their exact position, without disassembly of the transmission . . . all within fifteen minutes. No. 400 set will remove and install transmission bushings and oil seals on Ford and Mercury cars thru 1954, and Chevrolet cars, 1955 thru current models. Can also be used to install Chevrolet rear axle grease seals. No. 401 set will remove and install transmission bushing and oil seals on Ford and Mercury cars, 1955 thru current models.

**No. 400**—Transmission bushing and oil seal pulling and installing set. Wt. 4 lbs.

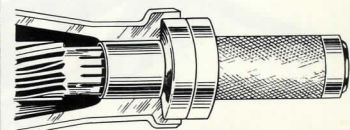
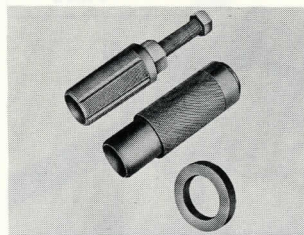
**No. 401**—Transmission bushing and oil seal pulling and installing set. Wt. 4 lbs.



REMOVING BUSHING



INSTALLING BUSHING



INSTALLING OIL SEAL

### PINION SHAFT PULLER, NO. 944-G

A complete unit designed and built to remove the Buick and Chevrolet car and truck pinion shaft and drive shaft assembly on models where the assembly comes out through the rear of the differential housing. Puller comes complete with two sets of jaws, one wide and the other narrow, and is an indispensable tool in shops servicing Buick and Chevrolet cars and trucks. Wt. 10 lbs.

### PINION OIL SEAL PULLER, NO. 958

An extremely popular attachment designed to be used with the No. 943-S slide hammer (page 32) when pulling pinion shaft oil seals on Chrysler, Pontiac, Packard, Willys, Ford and other makes of automobiles which use a Hotchkiss drive. Attachment is hollow and fits over the pinion shaft so that the special buttress threads can be threaded into the oil seal to be pulled. Wt. 2½ lbs.

### RING SPREADING PLIER, No. 715

Here is an inexpensive, practical plier, ideal for removing synchronizing rings and snap rings in automotive transmissions . . . and for other applications which require the spreading of snap rings. The parallel action and the recessed tips prevent rings from slipping off when the work load is applied to the plier. When not in use, plier jaws are held closed by a clip included with the plier. Jaws open when handles are closed.

**No. 715**—Parallel action spreading plier; 10½" long; wt. ½ lb.

### SPECIAL CHEVROLET POWER-GLIDE TRANSMISSION FLARE-NUT WRENCHES

Here are two extremely useful wrenches designed for work on fluid cooling lines of Chevrolet Power-Glide transmission systems. Wrenches are drop forged from high grade alloy steel, scientifically heat-treated for maximum strength and long wear, and work together as a team; one wrench holds while the other turns.

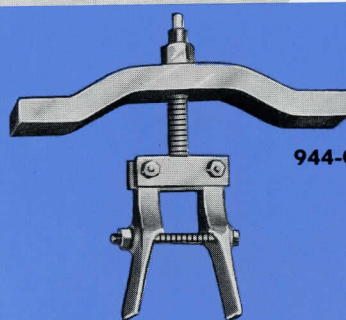
**No. 520**—Chevrolet Power-Glide transmission flare-nut wrench; ¾" opening; wt. 7 oz.

**No. 521**—Chevrolet Power-Glide transmission flare-nut wrench; ½" opening; wt. 5 oz.

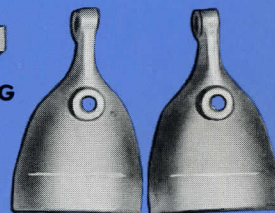
### UNIVERSAL CLUTCH ALIGNING SET

Here is an extremely popular and very practical set designed for aligning single disc clutches in many popular makes of cars, trucks, tractors. Set includes seven accurately machined pilots which, together with the body of the tool, accommodates pilot bearings with internal bores of: .590, .612, .624, .668, .749, .786, .808 and .984 inches.

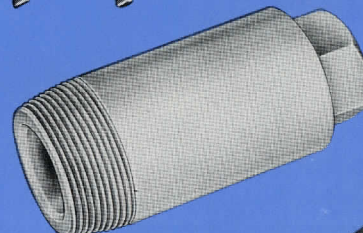
**No. 822**—Universal clutch aligning set; wt. 3 lbs.



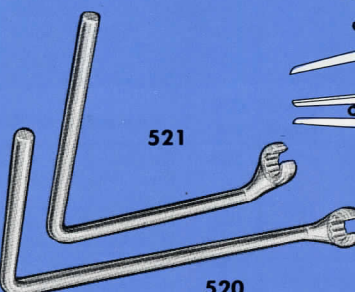
944-G



958

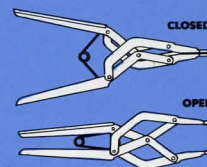


715



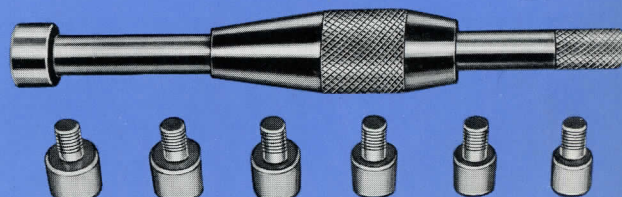
521

520



CLOSED

OPEN

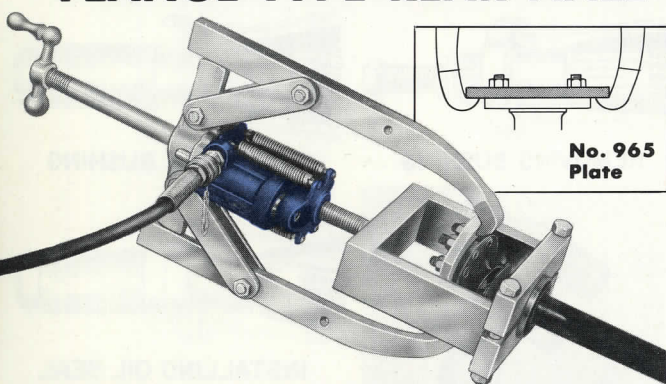


822



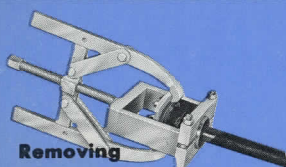


## FLANGE TYPE REAR AXLE BEARING PULLER-INSTALLER

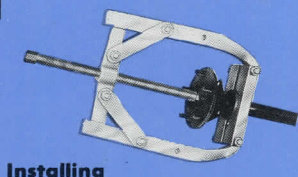
No. 965  
Plate

- Safe and fast—Makes a tough job easy
- Eliminates damage to flange and shaft

Here are specially designed tools for removing and installing flange type rear axle bearings without danger of damaging shaft, flange and component parts. Tools are simple to use . . . no complicated parts. During removing, for example, a special plate is slipped over the studs and bolted down against the flange; the puller jaws (or blocks, when done in a shop press) grip and bear against the plate rather than against the flange itself . . . protecting the flange from damage. Plate has slotted holes for universal use. A special universal "bridge" tool is also used along with one of the appropriate special pulling attachments. Only a claw-type puller (OTC No. 1003½) is required in addition to the special OTC attachments illustrated and described below.

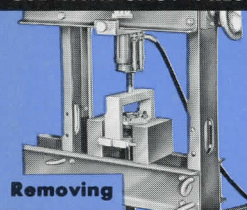
USE WITH PULLERS  
(hydraulic or mechanical)

Removing

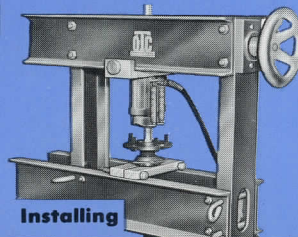


Installing

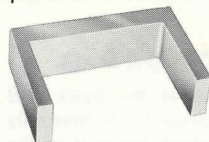
## USE WITH SHOP PRESSES



Removing



Installing



BRIDGE—No. 961—Removing Tool, Universal.



SLOTTED PLATE—No. 965—Removing Tool, Universal.



## ATTACHMENTS—Removing and Installing Tools:

No. 962—For late model Mercury, Lincoln, F1 and F100 Ford Pickup trucks.

No. 963—For late model Oldsmobile, Buick and Ford cars.

No. 964—For late model Chevrolet cars.

## FORD AND CHEVROLET TRUCK REAR AXLE BEARING LOCK NUT WRENCHES



Specially designed wrenches permit easy removal and replacement of rear axle bearing lock nuts in servicing rear axle, brake drums or rear wheel bearings, etc. Nos. 404-A through 410-A handle all Ford trucks; Nos. 529 through 530½ handle Chevrolet ¾ to 2-ton trucks. Some wrenches fit other makes of trucks also. Constructed of high grade steel.

OTC NO.	Size Openings		Overall Length	OTC NO.	Tubular Spanner Wrenches
	Hex	Oct			
404-A	2 5/8"	2 5/8"	8 1/2"	529	For Chev. ¾ and 1-ton trucks from 1946 through current models
405	2 3/4"	2 3/4"		530	For Chev. 1 1/2-ton utility model, 1936 through current year
406	—	3"		530 1/2	For Chev. 1 1/2 and 2-ton two-speed models, 1954 through current year
406-D	3 1/4"	3 1/4"			
407	3 1/2"	3 1/2"			
408-A	3 3/8"	3 3/8"			
409	4 1/8"	—	4 3/4"		
409-B	4 3/8"	4 3/8"	8 1/2"		
410-A	4 7/8"	4 7/8"			

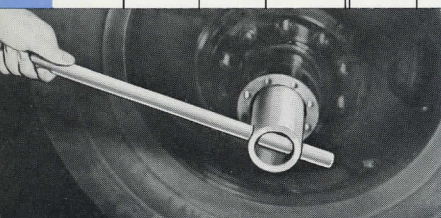
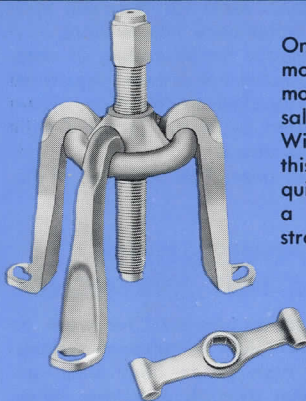


Illustration (1.) shows wrench No. 530 in use on Chevrolet 1 1/2-ton utility model truck, on lock nut, adjusting rear axle bearing.

## POPULAR OTC UNIVERSAL HUB PULLER FOR AUTOMOBILES AND LIGHT TRUCKS

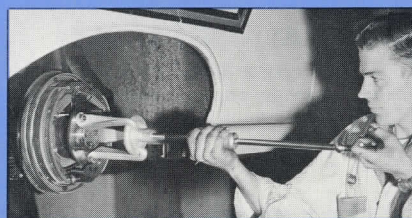


One of the most widely needed and most widely used pullers in all automotive service garages is the universal wheel hub puller—OTC No. 827-B. With sliding arms readily adjustable, this tool will pull rear wheel hubs quickly and easily. Maximum reach is a 7 1/2" bolt circle. It provides a straight pull and will not distort wheel lugs. Five legs should be used on Cadillac and Jeep hubs.

No. 827-B—Universal Hub Puller with striking wrench.

## SPECIAL OTC FLANGE TYPE AXLE PULLER

Here is one of OTC's newest special pullers for removing flange type axle assemblies on cars and light trucks. This special puller consists of three parts: the 827-B (less the striking wrench and the puller screw), into which an OTC No. 32-M adapter (1"-14M x 3/8"-18F) is threaded, and an OTC slide hammer puller, No. 943-S, which is threaded into the adapter. Illustration (left) shows this special puller in action.



No. 828—Flange Type Axle Puller.





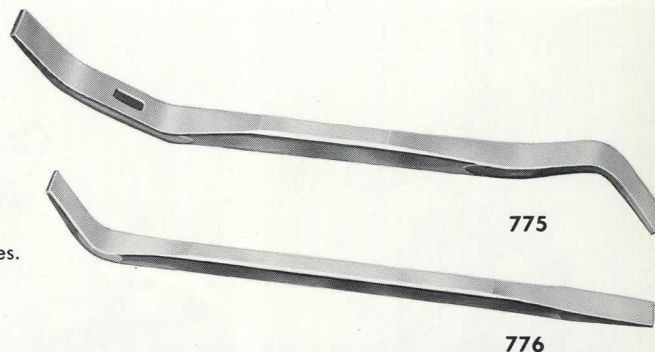
## POPULAR OTC AUTOMOTIVE BRAKE ADJUSTING TOOLS

- Drop forged from high alloy steel
- Scientifically heat-treated for strength

Here are two excellent tools necessary for adjusting brakes on a majority of automobiles and light trucks. No. 775 handles the cog screw and eccentric stabilizer on General Motors cars from 1936 through the present models. Also works on Hudsons and many other makes. No 776 is designed for use on Chevrolet cars and trucks, and other makes which use Bendix brakes.

**No. 775**—Brake adjusting tool; wt. 6 oz.

**No. 776**—Brake adjusting tool; wt. 6 oz.



### CHRYSLER BRAKE ADJUSTING WRENCH AND BRAKE SPRING TOOL, NO. 514-A

Ideal for work on Chrysler and DeSoto brakes. One end of the handle contains a  $\frac{3}{16}$ " hex wrench for adjusting the brakes, the other end contains a tool for removing the brake springs. Overall length 15  $\frac{1}{4}$ "; wt.  $\frac{1}{2}$  lb.

### OLDSMOBILE BRAKE BLEEDER WRENCH

For removing brake bleeder valve on late model Oldsmobile cars.

**No. 657**—Oldsmobile brake bleeder wrench;  $\frac{3}{8}$ " opening.

### HORSESHOE LOCK RING PLIER, NO. 714

Designed to spread and remove horseshoe lock rings used on hydraulic brakes, differentials and transmissions. 7  $\frac{1}{2}$ " long; maximum spread of 1  $\frac{3}{8}$ "; wt. 1 lb.

### INTERNAL BRAKE SPRING PLIER, NO. 704

An extremely useful tool for removing and installing internal brake springs on all makes of cars and trucks. 13  $\frac{1}{2}$ " long.

### SPECIAL OTC BRAKE CYLINDER HONES

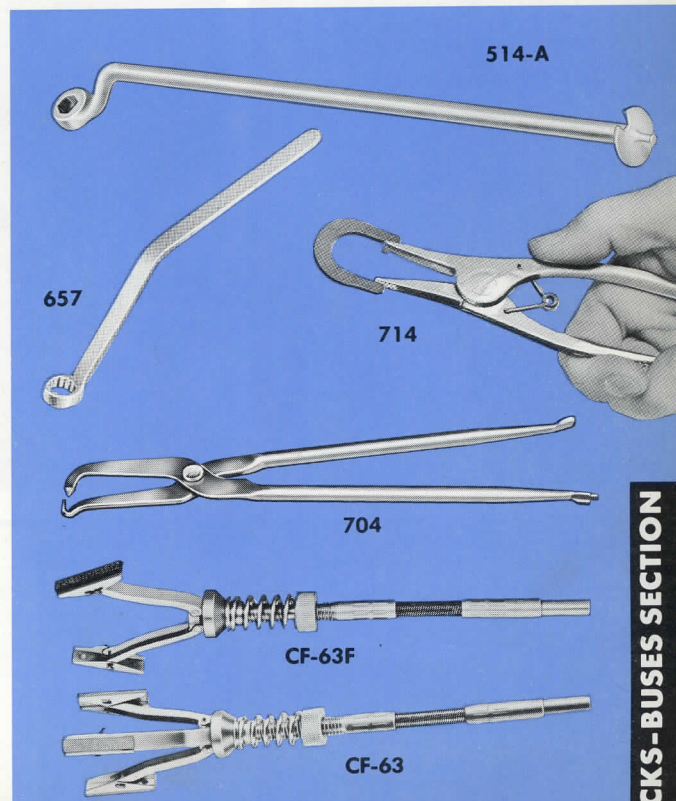
Here are two hones designed for brake cylinders and also recommended for resurfacing small engine cylinder bores. Flexible shaft self aligns and allows to drive from 0 to 15° angle. CF-63 will resurface small engine cylinder bores from  $\frac{3}{4}$ " to 2  $\frac{1}{4}$ ". CF-63F will resurface the 17 MM and 19 MM cylinders found on many foreign cars.

**No. CF-63**—Medium grit brake cylinder hone; wt. 1 lb.

**No. CF-63F**—Fine grit brake cylinder hone; wt. 1 lb.

**No. CF-63-1**—Set of medium grit replacement stones.

**No. CF-63-14**—Set of fine grit replacement stones.



## MISCELLANEOUS SPECIAL MAINTENANCE TOOLS

### SPECIAL HALF-MOON BOX WRENCHES

These wrenches are ideally suited for use on hard-to-get-at starter bolts on cars, trucks and tractors and for many other difficult-to-reach jobs. Half-moon shape makes it easy to reach around obstructions where other box wrenches cannot reach.

**No. 511**—Half-moon box wrench;  $\frac{3}{8}$ " x  $\frac{3}{8}$ " openings; wt. 7 oz.

**No. 531**—Half-moon box wrench;  $\frac{3}{8}$ " x  $\frac{3}{4}$ " openings; wt. 7 oz.

### SPEEDOMETER CABLE LOCK-NUT WRENCH

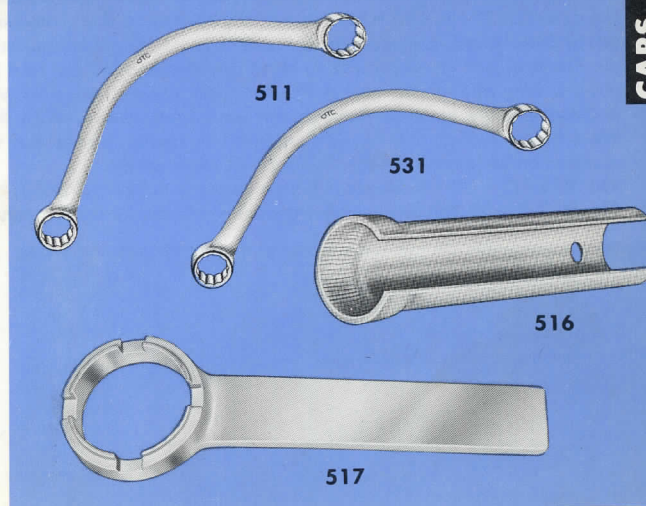
Here is a new practical wrench designed to turn the lock-nut which holds the speedometer cable in truck transmissions.

**No. 516**—Speedometer cable wrench.

### NEW GAS GAUGE LOCK-NUT WRENCH

Here is a new tool specially-designed to turn the lock-nut which mounts the gas gauge on late model Chrysler, DeSoto, Dodge and Plymouth automobiles. Drop forged from high grade alloy steel, scientifically heat-treated, and plated to prevent rust.

**No. 517**—Gas gauge lock-nut wrench.





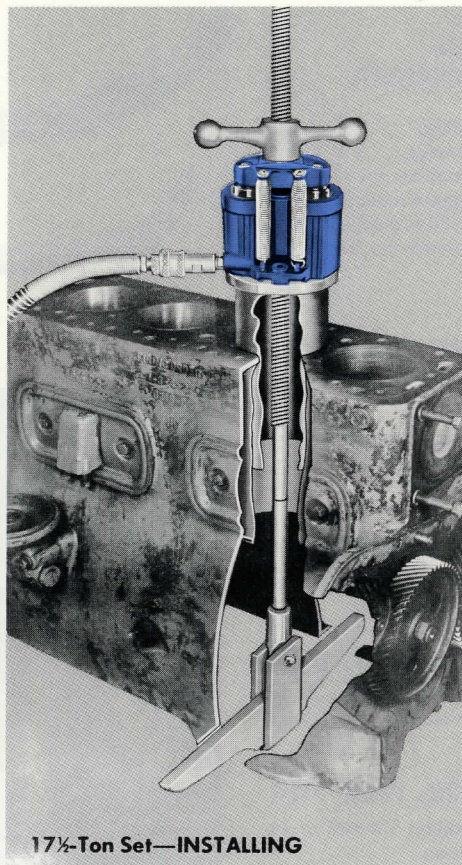
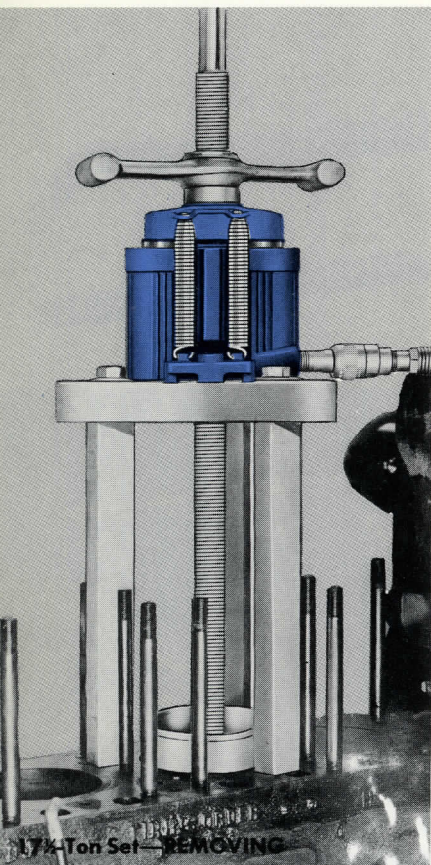


GENERAL SECTION

## sleeve pullers



## POPULAR OTC CYLINDER SLEEVE PULLER-INSTALLERS

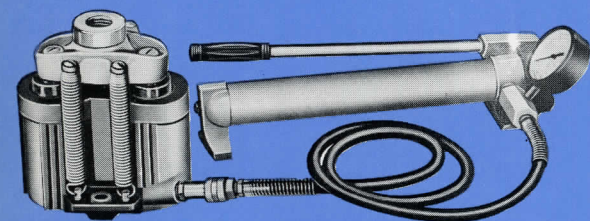


- In both manually and hydraulically-operated sets
- Handle either wet or dry sleeves . . without removing cylinder head studs
- For trucks, tractors, buses and other power units; special adapters for all engines

A substantial amount of time and money can be saved in re-sleeving engines through the use of an OTC cylinder sleeve puller-installer—faster, safer and easier than old, makeshift methods; speeds re-sleeving by up to 75%, and with 50% less effort.

Choose from three sizes: screw-powered, manually-operated puller-installer; 17 1/2-ton capacity hydraulic puller set; or, 30-ton hydraulic set.

The manual set and the 17 1/2-ton set are the most widely used, since each (using special adapters) will handle more than 350 makes and models trucks, tractors, buses and other power units. Adapter plates are not included with the puller sets and must be ordered separately.



## VERSATILE "POWER-TWIN" RAM AND PUMP

In addition to the direct benefits of saving time and labor in re-sleeving engines with an OTC hydraulic unit, many indirect benefits are enjoyed by customers who use the popular "Power-Twin" ram and pump to power other OTC pullers and OTC hydraulic shop presses—utilizing to the utmost the hydraulic flexibility of the OTC "pulling system!"

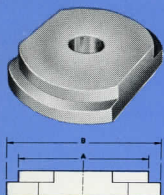
## 30-TON HYDRAULIC SET

The powerful 30-ton unit is built especially to handle the re-sleeving operation on large gas or diesel engines in heavy trucks such as Mack, Cummins, Hercules, Buda, Waukesha, etc. The tool is fully adjustable to clear cylinder head studs, and the 1 1/4"-7, 42" pulling screw is long enough to remove the toughest sleeves. Adapter plates (from 4" to 10" in diameter) are inserted through the bore from above. With the exception of those listed below (which are regularly carried in stock), plates for the 30-ton puller are made to order (please specify "A" and "B" dimensions).

No. 975-HY—30-Ton Sleeve Puller complete with hydraulic units\*, wt. 115 lbs.

No. 975-B—30-Ton Sleeve Puller assembly without hydraulic units, wt. 69 lbs.

## PULLING ADAPTER PLATES

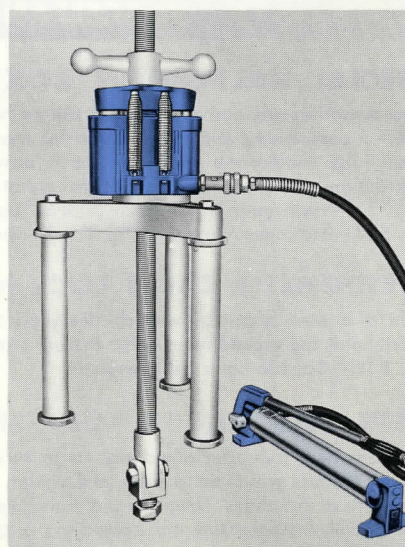


Bore	"A"-ID	"B"-OD	Plate No.
4 1/4"	4.421"	4.547"	975-12
4 1/2"	4.797"	4.906"	975-15KB
4 3/4"	4.860"	5.044"	975-16
5 1/4"	5 3/8"	5 1/2"	975-18
5 1/2"	5 3/4"	5 3/4"	975-19
5.4	5.385"	5.555"	975-21
7.0"	6 3/4"	7 1/4"	975-28
7 1/4"	7 1/4"	7 3/4"	975-29

## CONTENTS OF 975-HY

- No. 975-1 Three-way Head
- No. 975-2 Pulling Screw
- No. 975-D Set of 3 Risers
- No. 975-11 Safety Nut
- No. 975-S Swivel Ass'y.
- No. Y30-15 Speed Nut

- \* { No. Y-33 Ram and Pump
- { No. Y30-2D Plain Insert



OWATONNA TOOL COMPANY

OWATONNA, MINNESOTA, U.S.A.





GENERAL SECTION

## sleeve pullers

### 17 1/2 -TON HYDRAULIC SET

Handles re-sleeving on more than 350 makes and models of trucks, tractors, buses, etc., making it one of the most universal tools of its kind on the market today. Lightweight and easy to use. (SEE ACTION PICTURES, TOP OF P. 30.)

A wide variety of pulling adapter plates for this tool are available (as shown in the chart, right). Plates are not included in the sets and must be ordered separately.

**No. 970-HY**—17 1/2-Ton Sleeve Puller with hydraulics\*, wt. 82 lbs.  
**No. 973**—17 1/2-Ton Sleeve Puller without hydraulics, wt. 48 lbs.

#### CONTENTS OF 970-HY

No. 970-A Three-way Head  
No. 973-1 Pulling Screw  
No. 973-2 Screw Extension  
No. 970-D3 Set of 3 Risers  
No. 973-6 Installing Bar  
No. 973-R Installing Yoke  
No. 973-S Swivel Assembly

No. 973-8 Speed Nut  
No. 973-10 Reg. Hex Nut  
No. 970-L Cap Screws (3)  
No. 970-M Washers (3)

\* { No. Y-18 Ram and Pump  
No. Y15-2D Plain Insert

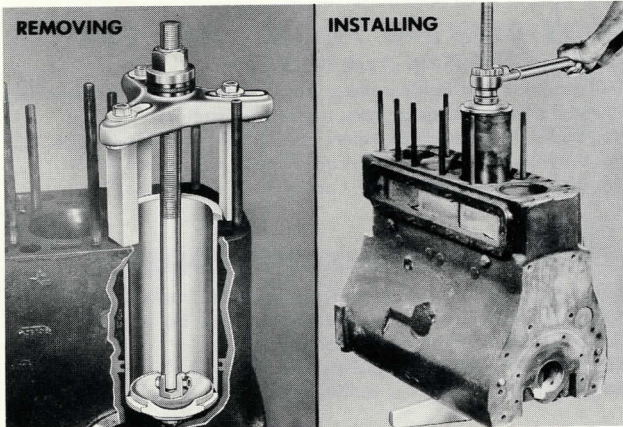
### MANUALLY-OPERATED SET

Like the 17 1/2-ton, this popular set handles more than 350 makes and models, but is manually-operated—screw-powered. Adapter plates (see chart, right) are applied through the bore from the top . . . making removal a one-man operation. OTC reversible ratchet No. P-61 with 1 1/2" hex opening plus No. M-28 24" tubular handle are recommended for driving the puller screw.  
**No. 970**—Manually-Operated Sleeve Puller, wt. 21 lbs.

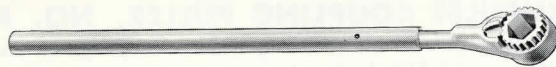
#### CONTENTS OF NO. 970

No. 970-A Three-way Head  
No. 970-B1 Pulling Screw  
No. 970-C1 Swivel  
No. 970-D3 Set of 3 Risers  
No. 970-E Hex Nut  
No. 970-F Thrust Bearing

No. 970-G Thrust Washer  
No. 970-H1 Reg. Hex Nut  
No. 970-J1 Cap Screw  
No. 970-K Hex Nut  
No. 970-L Cap Screws (3)  
No. 970-M Washers (3)



P-61  
Ratchet  
with  
M-28  
Handle



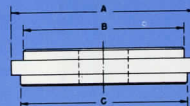
### SLEEVE PULLING ATTACHMENT, NO. 938-J



This is a special attachment to be used as a puller screw extension with the No. 938 series Push-Pullers to remove wet cylinder sleeves. The standard 970-series adapter pulling plates are attached to the swivel-end of the attachment for application through the engine bore from above.

### DRY SLEEVE INSTALLING PLATES

Five installing plates ranging from 3 3/8" to 5 1/2" are available. Each plate has two steps (making both sides usable) and a 1" dia. hole. Special plates will be made up on order; send dimensions and other requirements for quotation.

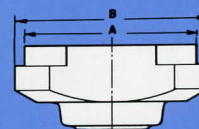
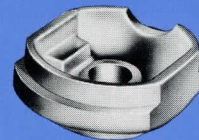


No.	Fits Sleeves From	"A"	"B"	"C"
976-1	3 3/8" to 3 1/2"	3 3/8"	3.171"	3.421"
976-2	3 1/2" to 3 3/4"	3 1/2"	3.546"	3.859"
976-3	3 3/4" to 4"	3 3/4"	4.109"	4.359"
976-4	4" to 4 1/4"	4"	4.390"	4.734"
976-5	4 1/4" to 5 1/2"	4 1/4"	4.797"	5.734"

### FOR 17 1/2 -TON AND MANUALLY-OPERATED PULLER SETS

Pulling adapter plates in the chart (right) are for use with the 17 1/2-ton hydraulic puller (Nos. 970-HY and 973) and the manually-operated puller (No. 970). Adapter plates are not included with any of the pullers and must be ordered separately. Plates can be used for either wet or dry sleeves. In selecting the proper plate, first find out the bore size of the engine to be re-sleeved; and whether sleeves are wet or dry; then determine from the chart the proper plate.

Fed. Spec. GGG-P-781



#### IMPORTANT

Selection of the right size adapter plate is important. Be sure to know the size of the bore for the specific engine model and whether the sleeves are wet or dry so that the plate with proper "A" and "B" dimensions can be ordered.

Bore Inches	"A" I. D. +.010 -0.000	"B" O. D. +.015 -0.015	OTC Plate No.
3.314	3 1/8"	3 3/8"	970-0
3.0	2 3/8"	3 1/8"	970-1
3.0	2 3/4"	3 1/4"	970-1A
3 1/8"	3 3/8"	3 3/8"	970-2
3 1/8"	3 3/4"	3 3/4"	970-2F
3 3/8"	3.171	3 1/2"	970-2FC
3 3/4"	3 3/8"	3 3/8"	970-3
3 3/4"	3.238	3.360	970-3RC
3 3/4"	3.238	3.435	970-3RD
3 3/8"	3 1/2"	3 3/8"	970-4
3 3/8"	3 3/4"	3 3/4"	970-4B
3 3/8"	3 3/8"	3 3/8"	970-4H
3 1/2"	3 1/2"	3 1/2"	970-5
3 1/2"	3 3/4"	3 3/4"	970-5C
3 1/2"	3.484	3.64	970-5D
3 1/2"	3 3/4"	3 3/4"	970-5FC
3 3/8"	3 3/8"	3 3/8"	970-6
3 3/8"	3.610	3.788	970-6B
3 3/8"	3.609	3.729	970-6K
3 3/8"	3 3/4"	4 3/8"	970-7
3 3/8"	3.735	3.855	970-7B
3 3/8"	3 3/4"	3 3/4"	970-7C
3 3/8"	3 3/4"	3 3/4"	970-7D
3 3/8"	3.547	3.663	970-7E
3 3/8"	3 3/4"	3 3/4"	970-7K
3 3/8"	3.671	3.792	970-7F
3 3/8"	2 3/8"	4 1/8"	970-8
3.8998	3.885	4.050	970-8F
3 3/8"	3 3/4"	4 3/8"	970-8M
4	3.922	4.256	970-8W
4	3 3/8"	4 1/8"	970-9
4	3 3/4"	4 3/8"	970-9B
4	3 3/4"	4 1/4"	970-9C
4.40	4.390	4 3/8"	970-9W
4 1/8"	4 3/8"	4 1/2"	970-10
4 1/8"	4 1/4"	4 1/8"	970-10B
4 1/8"	4.109	4.229	970-10C
4 1/8"	4 1/4"	4 3/8"	970-10K
4 1/8"	4 1/2"	4 3/8"	970-11
4 1/8"	4.235	4.470	970-11B
4 1/8"	4 1/2"	4 3/8"	970-12
4 1/8"	4.359	4.593	970-12B
4 1/8"	4 3/4"	4 3/4"	970-12K
4 1/8"	4.422	4.563	970-12M
4 1/8"	4.421	4.875	970-12P
4 1/2"	4 1/2"	4 3/8"	970-13
4 1/2"	4.484	4.630	970-13H
4 1/2"	4.485	4.937	970-13W
4 1/2"	4 1/2"	5 1/4"	970-14
4 1/2"	4 3/4"	4 3/4"	970-14B
4 3/4"	4 3/8"	5 1/2"	970-15
4 3/4"	4 3/4"	5 1/4"	970-15K
4 1/2"	4.797	4.906	970-15KB
4 1/2"	4 3/8"	5 1/2"	970-16
4 1/2"	4.860	4.980	970-16K
5	4 3/8"	5 1/2"	970-17
5 1/8"	5 3/8"	5 1/2"	970-18
5 1/4"	5 3/8"	5 3/8"	970-19
5 1/2"	5 1/2"	5 3/8"	970-20
STEEL PLATES			
5	4 3/4"	5 3/4"	970-17C
5 1/8"	5 3/8"	5 1/8"	970-18C
5 1/4"	5.235	5.470	970-19B
5 3/8"	5.360	5.687	970-20W
5 1/2"	5 1/2"	5 1/8"	970-21
5 1/2"	5 3/4"	5 3/8"	970-21C
5 3/8"	5 3/4"	6 3/8"	970-22
5 3/8"	5 3/4"	5 3/8"	970-22C
5 3/8"	5 3/8"	6 3/8"	970-23
5 3/8"	5.718	6.468	970-23C
5 3/8"	5.734	6.062	970-23K
5 3/8"	5 3/8"	6 3/8"	970-24
6	5 3/8"	6 3/8"	970-25
6 1/4"	6.235	6 3/8"	970-27
6 1/2"	6.235	6 3/4"	970-27C
6 3/4"	6.734	7 1/4"	970-27F
7	6 3/4"	7 3/8"	970-28
7 1/4"	7 1/4"	7 3/4"	970-29
8 1/2"	8 3/8"	9 1/2"	970-30
9 3/8"	9 3/4"	10 3/8"	970-31



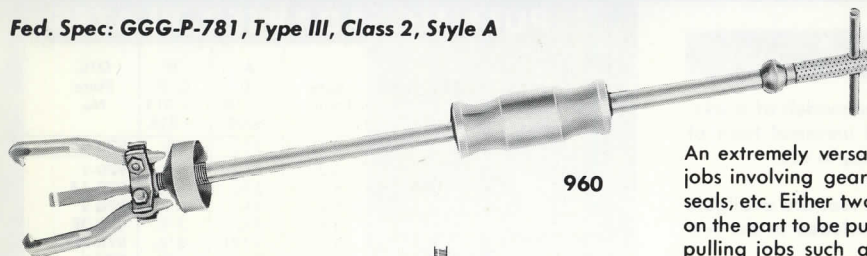


GENERAL SECTION

## special pullers



Fed. Spec: GGG-P-781, Type III, Class 2, Style A



960



2-Jaw Spread



3-Jaw Spread

REVERSE CONE  
TO THIS POSITION  
FOR INSIDE  
PULLING JOBSSLIDE HAMMER  
PULLER NO. 960

An extremely versatile tool which will accomplish many pulling jobs involving gears, bearings, outer races, grease retainers, oil seals, etc. Either two or three puller jaws may be used depending on the part to be pulled. Jaws can be positioned to handle "inside" pulling jobs such as bearing cups and outer races as well as regular "outside" pulling jobs. In addition to the above uses for the 960, the basic slide hammer unit (943-S) can be removed from the puller head and jaw assembly and used independently with other attachments for special pulling jobs.

Puller No.	2-Jaw Spread				3-Jaw Spread				Wt. (lbs.)	Length overall
	Inside		Outside		Inside		Outside			
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.		
960	1¼"	3¾"	1"	4½"	1⅝"	4¾"	1½"	4½"	8	27"

## SLIDE HAMMER PULLER, NO. 943-T

This tool combines the OTC cup pulling attachment No. 943-B (catalog no. P-9, page 8) and the 943-S slide hammer assembly. Ideal for pulling bearing cups from blind holes on tractors, trucks, busses etc.

No. 943-T—Slide hammer puller, complete; wt 9 3/4 lbs.

No. 943-S—Slide hammer (Only) 24" long, 3/8"-18 threaded end.

## GEAR AND PULLEY PULLER, NO. 515

Good for pulling timing gears, fan pulleys, harmonic balancers, etc. Use with 950 pulling attachment for pulling bearings etc.

No. 515—Puller with 13 3/4" long screw; wt 2 lbs.

No. 515-A—Puller with 5 1/2" long screw; wt. 1 1/2 lbs.

## PILOT BEARING PULLER, NO. 954

Fed. Spec: GGG-P-781, Type III, Class 1

Built especially for inside pulling jobs and particularly for removing flywheel pilot bearings on cars, trucks and tractors.

No. 954—Pilot bearing puller; cap. 1/2" to 1 1/2" I.D.; reach, 1".

No. 954-B—Pilot brg. puller; cap. 3/8" to 2" I.D.; reach, 1".

No. 954-C—Pilot brg. puller; cap. 1/2" to 2" I.D.; reach, 2".

## POPULAR PILOT BEARING PULLERS

Designed to pull flywheel pilot bearings on trucks and tractors in close quarters where slide hammer cannot be used. Operates on many models with the engine in the chassis.

No. MD-955—Pilot brg. puller; cap. 1/2" to 1 1/2" I.D.; reach, 1".

No. MD-956—Pilot brg. puller; cap. 3/8" to 2" I.D.; reach, 1".

## IMPULSE COUPLING PULLER, NO. MT-8

An excellent tool for removing impulse couplings on Fairbanks Morse and Splittorf magnetos, but ideal for other similar internal pulling jobs as well. Wt. 1 lb.

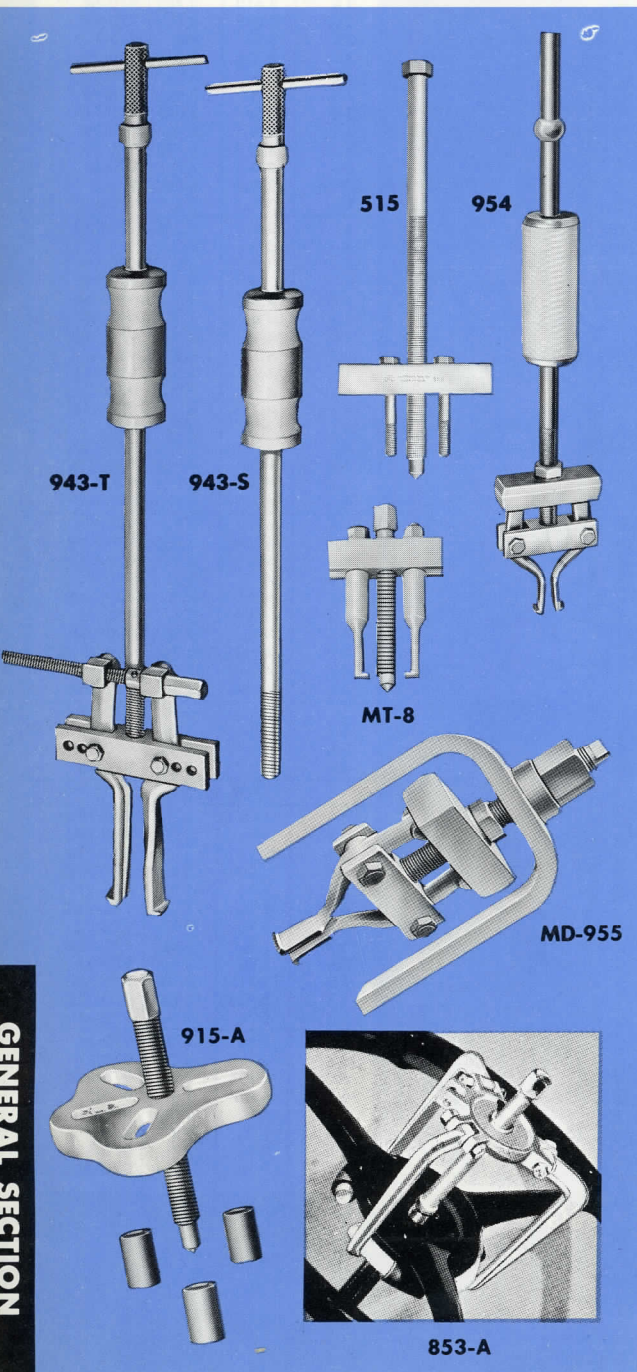
## STEERING WHEEL PULLER, NO. 853-A

A universal tool designed to pull steering wheels on many makes and models of cars, trucks and tractors, but can also be used for other pulling jobs requiring a two or three jaw puller. Ring against which pull is made is equipped with rubber cushions. Comes complete with two pulling rings, and a special adapter.

## SPECIAL OTC STEERING WHEEL PULLER

Will pull steering wheels on most makes of late model cars. Any standard cap-screw may be inserted through puller head to engage part to be pulled. Can also be used as a two or three way puller to remove flanges, pulleys, small flywheels etc.

No. 915-A—Steering wheel puller.

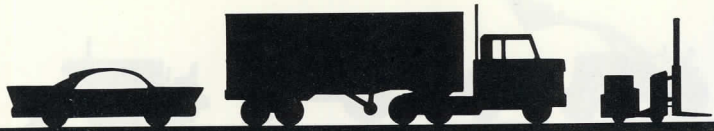


GENERAL SECTION

OWATONNA TOOL COMPANY

OWATONNA, MINNESOTA, U.S.A.





GENERAL SECTION

## engine tools

### SPECIAL VALVE SEAT INSERT PULLER SET, NO. Y-400

#### • Will not damage cylinder heads

Designed to pull valve seat inserts with a minimum of effort. Three sizes of heads provide adaptability to many engines. Set is recommended for engines whose inserts fall within range of the three heads now available. Use the Y-400 set with a 17½-ton Power-Twin ram and plain head insert.

**No. Y-400**—Valve seat insert puller set: contains Y-401 puller screw; Y-402 bridge; \*Y-403 small head; \*Y-404 medium head; \*Y-405 large head; W-2 hex key wrench; Y-407 1" USS hex nut. In metal box. Wt. 14½ lbs.

**No. Y400-A**—Same contents as Y-400 set plus 17½-ton Power-Twin ram with plain head and half-coupler. Wt. 26 lbs.

\*Insert Head Ranges

**No. Y-403**—1.250" to 1.562"

**No. Y-404**—1.600" to 1.875"

**No. Y-405**—2.000" to 2.437"



### SMALL ENGINE VALVE LIFTER, NO. CF-19

A fast operating tool for removing and replacing valve locks on small engines. Inside height, 5 ½"; inside width, (depth) 3 ¾" for engines with spring diameters up to 1 ½". Complete with two sets of jaws: CF-19-3A, CF-19-4.

**No. CF-19-3A**—Straight jaws; ⅝" to ¾" spring dia. capacity.

**No. CF-19-4**—Straight jaws; ⅞" to 1 ⅛" spring dia. capacity.

### POPULAR OTC VALVE GUIDE DRIVERS

A full range of valve guide drivers to fit the most commonly used valve guides on cars, trucks and tractors.

Valve Guide Drivers:

**No. AC-12**—2 ¾" dia., 7" long

**No. AC-10**—¾" dia., 6 ¼" long

**No. AC-14**—2 ¾" dia., 7" long

**No. AC-11**—1 ½" dia., 7" long

**No. AC-16**—½" dia., 7" long

### LARGE CAPACITY RING GROOVE CLEANER

Designed for large pistons 3" to 6 ¾" in diameter, found on trucks and tractors. Cleaning cutter has blade sizes for four ring grooves: ⅝", ¾", ⅞" and 1".

**No. 640**—Adjustable, large capacity, ring groove cleaner.

**No. 640-C**—Cutter (only) for 640 ring groove cleaner.

### PISTON RING GROOVE CLEANERS

Will fit all cars and trucks as well as many tractors. Spring tension on cutter blade provides non-gouging operation. Both tools adjust for pistons up to 6" in diameter.

**No. 845**—Ring groove cleaner. Blade sizes: ⅝", ¾", ⅞", 1".

**No. 846**—Ring groove cleaner. Blade sizes: ⅝", ¾", ⅞", 1".

**No. 845-A**—Cutter blade only. Sizes: ⅝", ¾", ⅞", 1".

**No. 846-A**—Cutter blade only. Sizes: ⅝", ¾", ⅞", 1".

### OTC MIDGET RING COMPRESSOR, NO. 10

Designed to compress piston rings on foreign car engines and other small bore gas engines. Has adjustable friction brake.

**No. 10**—Midget ring compressor. Capacity, 1 ½" to 3".

### OUTBOARD MOTOR RING COMPRESSOR SET

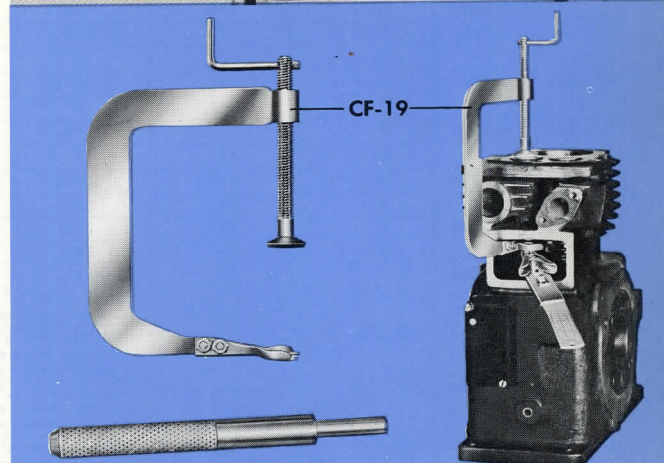
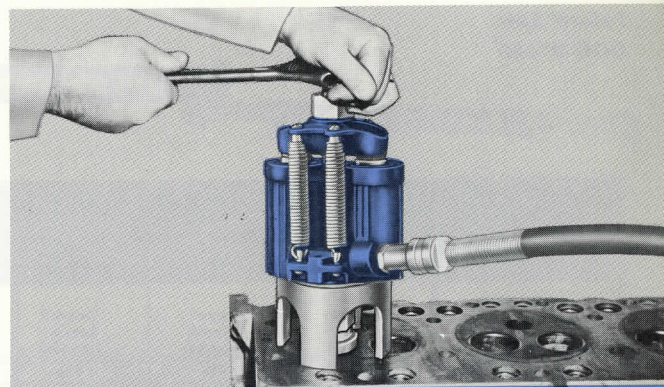
Ideal for compressing piston rings on most makes of outboard motors. Set contains two ring compressors with detachable bands.

**No. 25**—Outboard motor ring compressor set in plastic box.

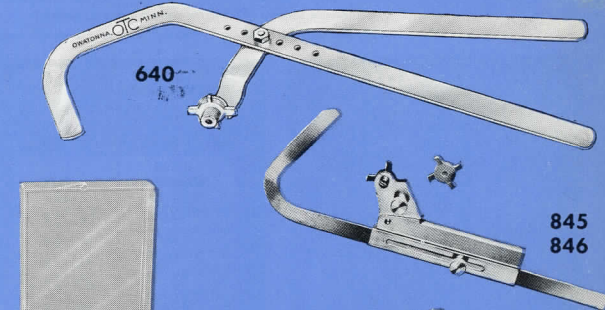
### DIESEL FUEL-LINE FLARE NUT WRENCH

A specially-designed open-side socket wrench for servicing diesel fuel-line flare nuts used on American Bosch fuel injection pumps and for other similar nuts which are normally hard to reach. Wrench takes a ⅜" drive and has a ¾", 12-point opening.

**No. AB-1**—Diesel fuel-line flare nut socket wrench; 4" long.



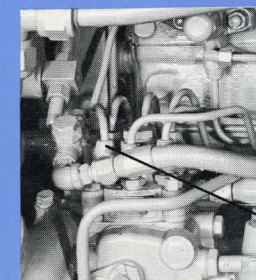
AC-10—AC-16



No. 25



No. 10



AB-1

THESE ARE THE  
SUBJECT NUTS





GENERAL SECTION

## torque wrenches



## OTC TORQUE WRENCHES AND NEW E-X-T-E-N-S-I-O-N-S

Federal Spec:  
GGG-W-686

• More torque wrench for your money

## HOW MUCH TORQUE DO YOU NEED?

CHOICE OF WRENCH DIMENSIONS

ORDER  
OTC WRENCH  
MODEL NUMBER

CAPACITY		Drive Square Size (Inches)	Lever Length (Inches)	Overall Length (Inches)	Foot-Pound Graduated Wrenches	Inch-Pound Graduated Wrenches
Foot Pounds	Inch Pounds					
	0 to 100	3/8	9 3/16	10 1/8	—	DR100-I
	0 to 200	3/8	10 1/8	11 1/8	—	DR200-I
0 to 25	0 to 300	3/8 or 1/2	12 3/16	14 7/8	†DR25	†DR300-I
		3/8 or 1/2	13 1/2	16	†S25*	†S300-I*
0 to 50	0 to 600	3/8 or 1/2	13 3/16	15 11/16	†R50	†R600-I
		3/8 or 1/2	13 1/2	16	†S50*	†S600-I*
0 to 100	0 to 1200	1/2	16 11/16	19 3/16	R100	R1200-I
		1/2	15	17	S100*	S1200-I*
0 to 150	0 to 1800	1/2	16 11/16	19 3/16	R150	R1800-I
		1/2	18	20 3/16	S150*	S1800-I*
0 to 200	0 to 2400	1/2	19 1/4	21 3/4	R200	R2400-I
		1/2 or 3/4	24	28 1/8	†S200*	†S2400-I*
0 to 300	0 to 3600	3/4	30	34 1/4	S300*	S3600-I*
		USE A 150 FT.-LB. WRENCH AND EXTENSION—(S150 or S1800-I with 1/2" drives) —(M-28-18 adapter arm & accessories from chart "A" below.)				
0 to 400	0 to 4800	USE A 200 FT.-LB. WRENCH AND EXTENSION—(S200 or S2400-I with 3/4" drives) —(M-28-24 adapter arm & accessories from chart "A" below.) or (M-32-24 adapter arm & accessories from chart "B" below.)				
		USE A 300 FT.-LB. WRENCH AND EXTENSION—(S300 or S3600-I with 3/4" drives) —(M-28-30 adapter arm & accessories from chart "A" below.) or (M-32-30 adapter arm & accessories from chart "B" below.)				
0 to 600	0 to 7200	USE A 300 FT.-LB. WRENCH AND EXTENSION—(S300 or S3600-I with 3/4" drives) —(M-28-30 adapter arm & accessories from chart "A" below.) or (M-32-30 adapter arm & accessories from chart "B" below.)				
		USE A 300 FT.-LB. WRENCH AND EXTENSION—(S300 or S3600-I with 3/4" drives) —(M-28-60 adapter arm & accessories from chart "A" below.) or (M-32-60 adapter arm & accessories from chart "B" below.)				

† (Please specify which drive-square size you desire.)

\* (To get the "standard" instead of the "sensory" model, use prefix letter "F" instead of "S".)

Sensory Model "S"

Standard Model "F"

(Same as Model "S" except not equipped with sensory signaling mechanism)

Round Beam Model "DR"

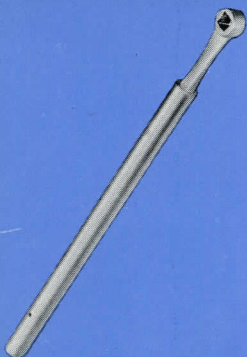
Round Beam Model "R"

For more lasting repair work, use a high-quality, rugged, easy-to-read OTC torque wrench, guaranteed to remain permanently accurate within 2% of maximum scale reading. Sensory "S" models have patented signaling device which alerts the operator through sound, feel and sight when the desired torque has been reached.

Get more torque wrench for your money by using an OTC extension (tubular adapter arm plus drive-end accessory) which exactly doubles the lever length of the wrench and thereby **doubles the range** of the wrench! Like getting two torque wrenches in one! (Some extensions **triple** torque wrench capacity!)

"Metric" torque wrenches are also available.

## TUBULAR ADAPTER ARMS



3/8" I.D. tubing; use accessories from Chart "A"

OTC No.	Lever Length	Takes Drive sq. size
M-28-18	18"	1/2"
M-28-24	24"	3/4"
M-28-30	30"	3/4"
M-28-60	60"	3/4"

1" I.D. tubing; use accessories from Chart "B"

OTC No.	Lever Length	Takes Drive sq. size
M-32-24	24"	3/4"
M-32-30	30"	3/4"
M-32-60	60"	3/4"

(Caution: use OTC extensions only with torque wrenches having pivoted handles.)

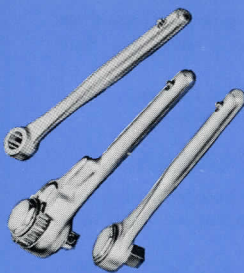
## DRIVE-END ACCESSORIES

## CHART "A"

O. D. of handles 7/8" nom.

Box Wrenches: 12 Pt.	OTC No.
3/4"	MS-24-A
7/8"	MS-28-A
1 1/16"	MS-30-A
1"	MS-32-A
1 1/16"	MS-34-A
1 1/8"	MS-36-A
1 1/4"	MS-40-A
1 5/16"	MS-42-A
1 3/8"	MS-44-A
1 7/16"	MS-46-A
1 1/2"	MS-48-A

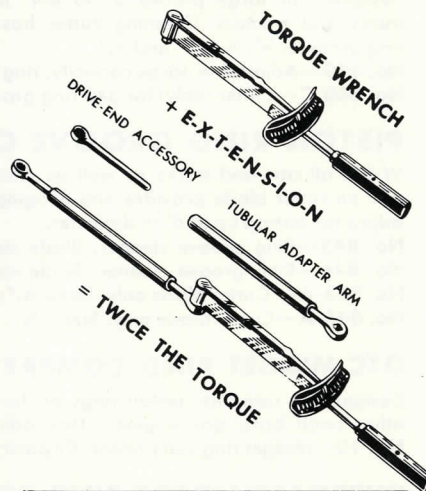
Ratchet	
Ratchet only; with 1 1/2" hex opening to accept adapter plugs: (below)	P-61-A
Adapter plug: 3/4" sq. male drive	P-61-6A
Adapter plug: 1" sq. male drive	P-61-10A
Drive Square	
Use MS-48-A box wrench with adapter plugs: (below)	MS-48-A
Adapter plug: 3/4" sq. male drive	MS-48-6
Adapter plug: 1" sq. male drive	MS-48-10



## CHART "B"

O. D. of handles 1" nom.

Box Wrenches: 12 Pt.	OTC No.
1 3/8"	MS-52-B
1 11/16"	MS-54-B
1 3/4"	MS-56-B
1 13/16"	MS-58-B
1 7/8"	MS-60-B
2"	MS-64-B
2 1/16"	MS-70-B
2 1/4"	MS-72-B
Drive Square	
Use MS-72-B box wrench with adapter plugs: (below)	MS-72-B
Adapter plug: 1" sq. male drive	MS-72-10
Adapter plug: 1 1/2" sq. male drive	MS-72-12



## SPRING TESTER, NO. SPT

Use with accurate OTC torque wrench, to check the strength of valve springs to manufacturer's specifications. 400 lb. capacity.

OWATONNA TOOL COMPANY  
OWATONNA, MINNESOTA, U.S.A.



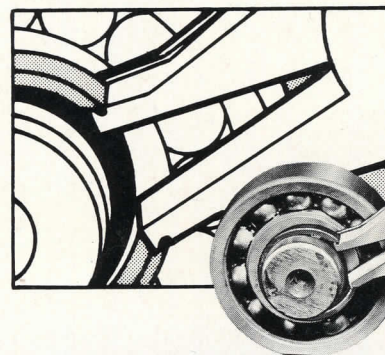


## EXCLUSIVE "GROOVE-GRIP" NOSE SNAP RING PLIER

### • Gives positive grip in removing rings

An original OTC design, this popular snap ring plier with exclusive "groove-grip" nose is used to quickly and easily remove contracting-type snap rings which locate bearings or gears on shafts. The special "groove-grip" feature—a thin, deep L-shaped groove on the outside tips of the nose—permits easy gripping of the snap ring for removal. As pressure is applied to the plier to spread and remove the ring, the ends of the ring are forced into and thereby safely "gripped" by the grooves which prevent the ring from slipping off the plier.

**No. 614**—Snap Ring Plier, 8" long, max. spread 1 3/8"



614

### HORSESHOE LOCK RING PLIER, NO. 714

A popular plier designed to spread and remove horseshoe lock rings used on hydraulic brakes, differentials and transmissions. Plier is 7 1/2" long and has maximum spread of 1 3/8".

### BATTERY TERMINAL PULLER, NO. 847-A

For removing battery terminals from posts without damage. Special striking pad on the puller takes the blow of a hammer when it is necessary to drive the jaws under the terminal to pull it.

### POPULAR OTC STUD PULLER, NO. 865-B

To be powered by a standard 1/2" male drive handle, this stud puller with knurled wheel has a capacity of 1/4" to 3/4". A special snap-on feature permits changing of the working surface as well as replacing of worn out wheels. Knurled wheel (No. 865B-3) is not guaranteed; replacement wheels can be ordered separately.

### BUSHING DRIVER SET, NO. 818

A complete range of driving collars with two handles to fit and built especially for removing and installing bushings in tie rods, spindles, water pumps, con rods, pistons, etc. Set comes in metal box 10 1/2" x 2 3/4" x 1 1/8". Contents of Set:

Collar No.	Bushing I.D.	Bushing O.D.	Collar No.	Bushing I.D.	Bushing O.D.	Collar No.	Bushing I.D.	Bushing O.D.
800	3/16"	3/8"	806	1 3/8"	1 3/4"	811	1 1/2"	1 3/4"
801	3/8"	1 1/8"	807	7/8"	1"	813	Dr. Mandrel	
802	3/8"	3/4"	807-A	7/8"	1 3/8"		for 800 to 804	
803	1 1/8"	1 3/8"	808	1 3/8"	1 3/4"	814	Dr. Mandrel	
803-C	2 3/32"	2 1/2"	809	1"	1 1/8"		for 806 to 811	
804	3/4"	7/8"	810	1 1/8"	1 3/8"	890	Metal Box	

### BUSHING DRIVER SET, NO. T-818

Removes and installs bushings on trucks, tractors and other heavy equipment. Set contains first six sizes only and driving mandrel in metal box No. 890, 10 1/2" x 2 3/4" x 1 1/8".

Collar No.	Bushing I.D.	Bushing O.D.	Collar No.	Bushing I.D.	Bushing O.D.	Collar No.	Bushing I.D.	Bushing O.D.
T-806	1 3/8"	1 3/4"	T-809	1 3/8"	1 3/4"	T-811-A	1.603"	1 3/4"
T-807	1 1/2"	1 3/4"	T-810	1 3/8"	1 1/4"	815	Driving Mandrel	
T-808	1 3/8"	1 3/4"	T-811	1 1/2"	1 3/4"			

### OTC HOLLOW PUNCH SET, NO. HP-7

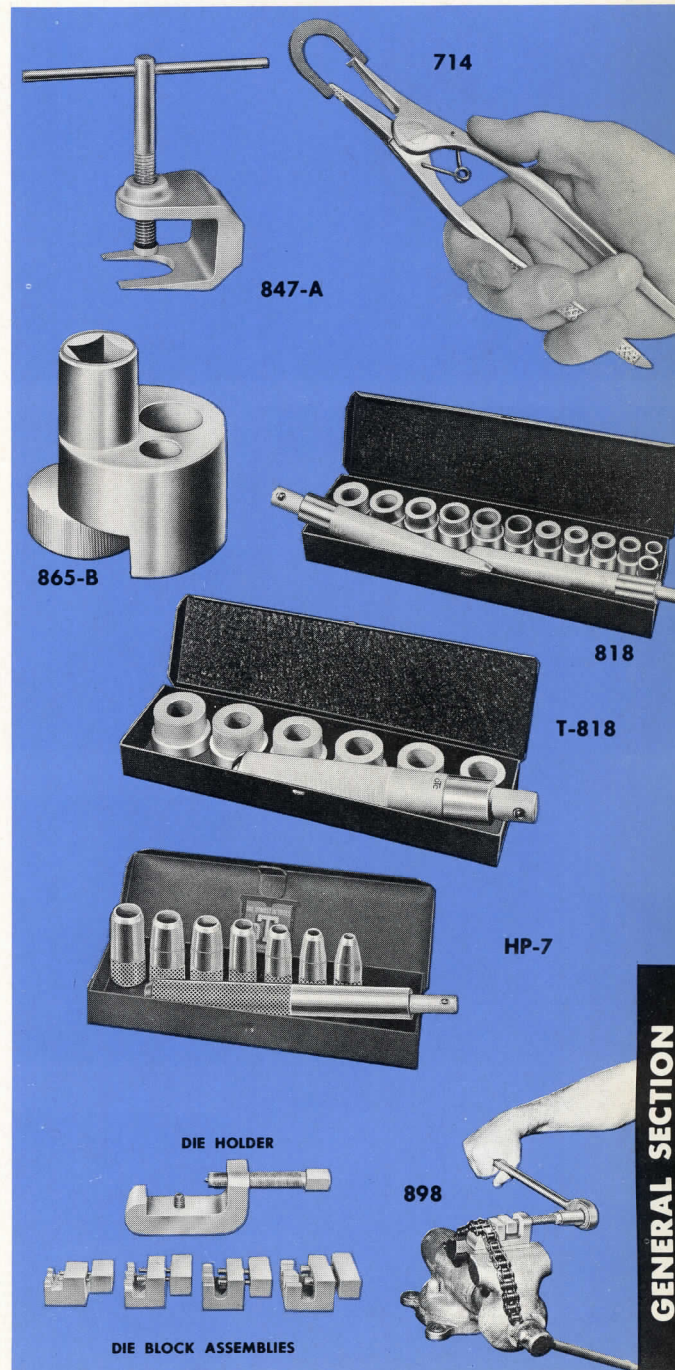
For cutting holes in gaskets, rubber hose, washers, etc. One mandrel fits seven sizes of punches: 1/4", 3/8", 1/2", 5/8", 3/4", 1", and 1 1/4". Set comes in metal case. Use wood block as base when cutting holes in cork, rubber, etc. Not for cutting metal.

### NEW "ROLLER-CHAIN-SEPARATOR" TOOL

A specially designed tool for easily separating roller chain by pressing out two pins simultaneously from the chain links.

**No. 898**—Roller Chain Separator Tool Set. Contents:

- No. 898-A**—Die Holder Assembly
- No. 898-B**—Die Block Assembly for 3/8" pitch chain
- No. 898-C**—Die Block Assembly for 1/2" pitch chain
- No. 898-D**—Die Block Assembly for 5/8" pitch chain
- No. 898-E**—Die block Assembly for 3/4" pitch chain



714

847-A

865-B

818

T-818

HP-7

898

DIE HOLDER

DIE BLOCK ASSEMBLIES



# The OTC Story

For many years recognized as a leading designer and manufacturer of special tools and hydraulic maintenance equipment, the Owatonna Tool Company has constantly strived to develop and manufacture the finest-designed and best quality maintenance tools on the market—tools which today encompass specialized pullers and push-pullers, hydraulic rams, hydraulic pumps and hydraulic shop presses—and which together form the OTC "pulling system."

The famous OTC Power-Twin "center-hole" hydraulic ram and pump are the heart of the "pulling system" and can be used to power hydraulic pullers, hydraulic shop presses, or used in some other independent capacity such as a hydraulic jack. The same ram and pump can do all of these jobs, since they are detachable (even from a shop

press) for independent use as a power source. OTC rams and special cylinders can also be used as production fixtures in production-line applications.

Whatever pulling-installing problems exist, with gears, bearings, bushings, sleeves, sprockets, pulleys, shafts, couplings, etc., the OTC "pulling system" has the answer.

Many special hand tools supplement the "pulling system" tools and equipment to solve and handle the most difficult of today's maintenance problems . . . from universal chain wrenches to huge sledging wrenches.

Approval and endorsement of OTC maintenance equipment by 14 major tractor manufacturers, six major truck manufacturers and eight major bearing manufacturers is your best guarantee of high quality, expert design, long life and complete satisfaction.

## INDEX

<b>CATEGORICALLY (by Sections)</b>	<b>PAGE(S)</b>
<b>INDUSTRIAL Section (special tools and hydraulic maintenance equipment for industrial tractors and heavy construction equipment)</b> .....	2—13
<b>FARM IMPLEMENT Section (special tools and hydraulic maintenance equipment for wheel tractors and other farm machinery)</b> .....	14—20
<b>CARS-TRUCKS-BUSES Section (special automotive tools and hydraulic maintenance equipment)</b> .....	21—29
<b>GENERAL Section (special tools and hydraulic maintenance equipment for use on more than one type of vehicle, such as the OTC Cylinder Sleeve Puller-Installer; plus, general/universal and miscellaneous tools)</b> .....	30—35
<b>ALPHABETICALLY (by "make" and by tool)</b>	
Allis-Chalmers (farm) tools .....	15
Allis-Chalmers (industrial) tools .....	2, 6—9
Brake tools .....	29
Bushing Driver Sets .....	35
Caterpillar tools .....	2, 10
Clutch and Transmission tools .....	27
Engine: Cylinder Deglazing, Head, Spark plug tools .....	26
Distributor, Generator tools .....	25
Ring tools .....	25, 33
Valve tools .....	24, 33
Ford Tractor tools .....	15
Front End tools: Pitman Arm tools .....	22, 23
King Pin Pusher .....	23
Caster-Camber tools .....	23
International-Harvester (farm) tools .....	15
International-Harvester (industrial) tools .....	2, 11
John Deere tools .....	16—19
LeTourneau-Westinghouse tools .....	12, 13
Massey-Ferguson tools .....	20
Master-Pin (track) puller-installer .....	3
Puller Sets: Auto, Light truck .....	21
Farm tractor .....	14
Industrial/Crawler tractor .....	4
Truck/Bus .....	21
Pullers, slide hammer and special .....	28, 32
Rear Axle tools .....	22, 28
Spanner wrenches .....	5
Sprocket Puller-Installers .....	2, 3
Torque Wrenches and Extensions; Spring tester .....	34
Truck Equalizing-Beam Service Press .....	22
Miscellaneous tools .....	5, 20, 29, 35

## GUARANTEE

OTC tools and equipment are guaranteed against defects in materials and workmanship. They are built to meet the exacting standards and requirements of professional maintenance men. Every tool manufactured and sold by this company found to be defective in either material or workmanship will be repaired or replaced. Any tool that has been abused, worn out, heated, ground or otherwise altered, or used for a purpose other than that for which it was intended, will not be covered by this guarantee. Final determination of defects must be made at our factory.

## INSPECTION

All OTC tools are thoroughly inspected before leaving our plant and each customer is assured of receiving a new tool of equal quality and design as that furnished to everyone else. There are no "seconds" in the OTC line and every tool must conform to predetermined, rigid standards.

We reserve the right to make changes in design or construction without obligation to incorporate such changes in tools previously sold.

## SERVICE

We offer service on OTC tools at any time during their life at a cost to the user covering only the material and labor necessary to put them in first class condition. Parts may be purchased to replace those lost or worn out. Consult the parts price lists for identification and prices on parts.

## WAREHOUSES

Complete stocks of OTC tools and equipment are maintained in strategic locations in the United States and Canada to provide OTC distributors and customers with the best possible service. Warehouses have been established so that 24 hour service may be rendered at all times. OTC strives to be just as close as your telephone . . . to give you friendly, prompt, dependable service.

## LITERATURE

OTC designs and disseminates comprehensive catalogs, price lists, parts lists, service bulletins, instruction-for-use booklets, special product brochures and advertising mailers and other helpful related material. Literature imprinting services are available also.

Other aids such as floor and table displays, point-of-purchase items and wall display panel boards are also available.

In addition to this catalog, OTC also makes available a complete and separate catalog on general industrial maintenance equipment—PULLERS, HYDRAULIC RAMS AND PUMPS, HYDRAULIC SHOP PRESSES and special HEAVY DUTY WRENCHES. This basic catalog is available upon request.

# OWATONNA TOOL COMPANY

OWATONNA, MINNESOTA, U. S. A.

EXPORT DEPARTMENT: OWATONNA, MINNESOTA, U. S. A.

CABLE ADDRESS: TOOLCO

Litho in U.S.A.